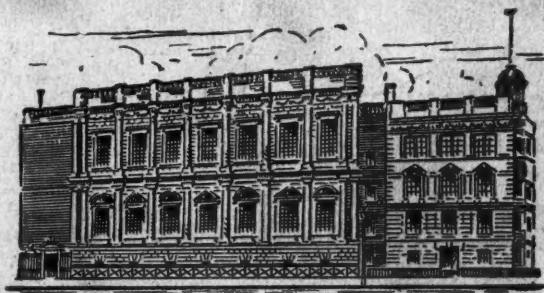


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# JOURNAL



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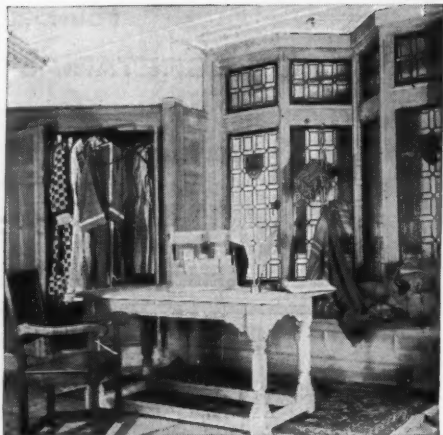
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Acceptances and Endorsements, &c., for account of Customers ..	24,874,316	17 5	Balances with other British Banks and Cheques in course of collection ..	10,501,608	6 5
Capital, viz.—			Money at Call and Short Notice ..	23,988,400	0 0
857,589 "A" Shares of £4 each fully paid	3,430,356	0 0	Bills Discounted ..	38,258,569	14 3
11,760,811 "B" Shares of £1 each, fully paid	11,760,811	0 0	Investments—		
667,050 "C" Shares of £1 each, fully paid	667,050	0 0	(Incl'd'g £641,380 6s. 0d. Securities lodged for Public Accounts)		
	15,858,217	0 0	Securities of, or guaranteed by, the British Government ..	54,521,242	15 11
Reserve Fund ..	10,250,000	0 0	British Dominions and Colonial Government Securities, Bank of England and British Corporation Stocks	1,639,740	7 4
	£386,063,756	9 7	Other Investments (including fully paid Shares and £500,000 "B" Shares of £5 each, £1 per Share paid up in Barclays Bank (Dominion, Colonial and Overseas) ..	2,385,209	8 10
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Situated in the Banqueting Hall of the old Palace of Whitehall (1622), with its magnificent Rubens ceiling, the R.U.S.I. Museum is a treasure house of relics and mementoes of great victories and renowned warriors. There is also a most valuable collection of Uniforms, Medals, Ship Models, and models of the battles of Trafalgar and Waterloo.

For Members and their friends, there are private entrances to the Museum from the Institution.

H.M. Forces in uniform are admitted free at the public entrance.

Admission to the general public is 1s.; Saturday after Noon, 6d.

## SECRETARY'S NOTES

November, 1929.

### Council.

The Council regret to have to record the death of General Lord Horne, G.C.B., K.C.M.G., D.C.L., LL.D., on the 15th August. He was a Vice-President of the Institution since 1928.

### New Members.

The following Officers joined the Institution during the months of August, September and October:—

#### ROYAL NAVY.

Acting Sub-Lieutenant J. C. G. Martin, R.N.

Commander G. C. Banister, R.N.

Sub-Lieutenant R. I. A. Sarell, R.N.

Commander W. P. Stocker, D.S.C., R.N.

#### ARMY.

Lieutenant T. H. H. Grayson, Irish Guards.

Captain L. A. Loup, I.A.S.C.

Major G. T. E. Keith, D.S.O., O.B.E., King's Own Royal Regiment.

Captain W. R. B. Peel, 19th K.G.O. Lancers, I.A.

Major L. F. Lanyon, The Green Howards.

Captain R. W. Kearns, The Bombay Pioneers.

Lieutenant Henry Wood, Queen's Royal Regiment.

2nd Lieutenant J. M. C. Hoblyn, Royal Corps of Signals.

Major R. W. Leach, The Suffolk Regiment.

Captain W. H. Hall, 4/19th Hyderabad Regiment.

Gentleman-Cadet O. G. W. White.

The Rev. T. H. Falkiner, sometime Captain, 2nd Battalion Connaught Rangers.

Lieutenant O. F. Sheffield, The York & Lancaster Regiment.

Captain L. V. C. Hawkes, 2/14th Punjab Regiment.

Captain The Marquess of Cambridge, K.C.V.O., 16th Battalion London Regiment (T.A.).

Lieutenant R. Norcock, Bedfordshire & Hertfordshire Regiment.

Captain C. M. Paton, *p.s.c.*, The Essex Regiment.

Lieutenant G. E. H. Philbrick, R.E.

Colonel P. L. Hanbury, C.M.G., D.S.O., *p.s.c.*, late K.S.L.I.

Captain G. D. Young, M.C., I.A.S.C.  
 Captain V. C. Holland, Royal Signals.  
 Captain B. G. Mason, R.A.  
 Bt. Lieutenant-Colonel M. H. Dendy, D.S.O., M.C., R.A.  
 Lieutenant J. F. Adye, R.A.  
 Captain The Hon. L. M. St. Aubyn, M.V.O., late King's Royal Rifle Corps.  
 Captain J. A. Taylor, M.C., The Rifle Brigade.  
 Lieutenant H. L. Longden, Dorsetshire Regiment.  
 Lieutenant D. G. G. Macdonald, R.E.  
 Captain J. F. Newbould, York and Lancaster Regiment.

#### ROYAL AIR FORCE.

Squadron Leader D. F. Stevenson, D.S.O., M.C., *p.s.a.*, R.A.F.  
 Flight Lieutenant Gilbert Martyn, R.A.F.  
 Flight Lieutenant F. A. Skoulding, R.A.F.  
 Squadron Leader E. J. Hodsoll, R.A.F.

#### Correction.

In the list of new Members published in the August JOURNAL, for Gentleman-Cadet R. E. J. Danbery, read Gentleman-Cadet R. E. J. Daubeney.

#### Members Joining in October.

The attention of potential Members is invited to the fact that if they join after 1st October of the current year, they are not called upon for any further subscription until January, 1931.

#### Special Facilities for Junior Officers.

Special attention is invited to the new Bye-Law governing the entrance of Junior Officers to the Institution, which was passed at the last Annual General Meeting. The terms are as follows :—

"Commissioned Officers of the Home, Dominion, Indian and Colonial fighting Services and their Reserves, of three years or less seniority as such ; Midshipmen, R.N., R.N.R. and R.N.V.R. ; and Naval, Military and Air Force Cadets, shall be admitted to Membership without Entrance Fee on payment of the first annual subscription of £1 5s.

"In all cases eligibility for such Membership shall be governed by para. 1 of Chapter 2.

"An Officer who is admitted without entrance fee and who subsequently fails to pay his annual subscription regularly or resigns, shall not be re-admitted without payment of such fee, notwithstanding the fact that he may, by virtue of his rank or seniority, be otherwise eligible for such concession.

"Officers joining under this Bye-Law will date their Membership from 1st January of the year in which they join. They shall not have the privilege of becoming Members in October and of paying no subscription on the ensuing 1st January."

### Change in the Lecture Programme.

The lecture on "Tactical Concentration" by Rear-Admiral C. V. Usborne, C.M.G., which was to have been given on Wednesday the 18th December, has been cancelled. Another naval lecture will be substituted.

### Gold Medal Essay, 1929.

The following Essays have been received :—

- "Deo Juvante."
- "Security with Economy."
- "Solvitur Volando."
- "One Thing is certain—Time Flies."
- "Similia Similibus curantur."
- "Defend by Attacking."
- "Sic Itur ad Astra."
- "Nemo me impune lacessit."
- "Concordia pavae res crescunt."

### Gold Medal Essay (Military), 1930.

The following is the subject which has been selected :—

"With the increase of mechanization the mobility of land forces over large areas will become increasingly dependent upon adequate supply systems.

"Discuss the advantages to be gained by increased speed and range of manoeuvre of mechanized forces in view of the limitations imposed by the necessity of organizing elaborate supply systems, particularly in regard to their operation in semi-civilized countries."

### EARDLEY-WILMOT BEQUEST

The late Rear-Admiral Sir Sydney M. Eardley-Wilmot has bequeathed the sum of £100 to the Royal United Service Institution "to be applied towards the grant of a gold medal to be given every five years commencing the fifth year after receipt of the legacy—for the best essay contributed by a Member of the Institution on 'Changes in Naval Warfare owing to New and Modified Weapons,' to be termed the 'Eardley-Wilmot Medal.'"

Admiral Eardley-Wilmot was for many years a Member of the Institution, and in 1879 competed for the Gold Medal Essay under the motto "Qui patitur vincit." His Essay was honourably mentioned.

### JOURNAL

#### Copies of the Frontispieces.

A limited number of copies of the coloured Frontispieces, published in recent numbers of the JOURNAL, are available for sale and can be supplied, post free, for 1s. 6d. each; 2s. 6d. a pair; 3s. 6d. for three; or 5s. the complete set.

#### Price of Journal to Non-Members.

The price of the JOURNAL to Non-Members, as from February, 1927, number, is 7s. 6d., or the four quarterly numbers will be sent for an annual subscription of £1 10s. post free in either case.

**Trade Discount.**

Recognised firms can now be supplied with not less than one dozen copies of the JOURNAL at a time, at a wholesale price of 7s. each copy, the buyer to collect from the Institution.

**Additional Copies of the Journal.**

Additional copies of early numbers of the JOURNAL, if available, can be supplied, post free, to Members at:—

3s. for JOURNALS prior to February, 1927.

4s. for the JOURNAL of February, 1927, and later.

**Journals for Disposal.**

The Officer Commanding the Depot, the Queen's Own Royal West Kent Regiment has volumes 1-46 of the R.U.S.I. JOURNAL for disposal. Any Member desiring to acquire these should communicate direct with him at the Barracks, Maidstone.

**MUSEUM****New Naval Models.**

The Council have recently purchased the second of the series of models depicting the various types of ships in the fleet of to-day; this represents the "Queen Elizabeth" after being modernised. This model, which is on view in the Crypt, is an exceptionally fine one, and to the same scale, i.e., 1/16" to the foot, as the first of the series,—H.M.S. "Warwick." It has been constructed by Mr. Norman Ough, and the Institution is indebted to the Department of the Director of Naval Construction for detailed particulars of the ship.

The next of the series will be a water-line model of an "O" class submarine.

**Mechanization Models.**

The first of a series of models illustrating the mechanization of the Army has been constructed for the Institution by Messrs. Vickers-Armstrongs. This is an accurate reproduction of a Carden-Loyd.

**Military Figures.**

A collection is being formed of small figures portraying the details and colour of old military uniforms. It is hoped to add to this from time to time, as it is felt that they will be a more satisfactory method of recording the uniforms of the Army, than by retaining a miscellaneous collection of the actual habiliments.

### Special Exhibition.

The Special Exhibition of Aircraft Models has been changed by the substitution of land machines for the seaplane and flying boat models. The Exhibition of lighter-than-air Models now includes a fine large scale model of "R.101."

Two dioramas have been added to the Exhibition, one illustrating an aerodrome and the other an airship base, the latter showing "R.101" moored to the tower.

### Additions.

#### PERMANENT.

- (8295) Medal struck in 1811 to James Sadler, first English Aeronaut.
- (8296) Water-colour picture showing the uniform of the Dillon Regiment.
- (8297) Gold watch and money bag carried by Cornet Bond, 12th Lancers, when he swam ashore from the wreck of the Birkenhead in 1852.
- (8298) Turkish Standard carried by the Turks at the Battle of Beersheba.
- (8299) Type of lighter used in the trenches before Sebastopol during the Crimean War, 1854.
- (8300) Colour of the Malwa Bheel Corps, 1845.
- (8301) Khedive's Star, with bar for Tokar.
- (8302) Uniform of the Royal North Devon Yeomanry.
- (8303) Tunic and Mess Kit of the 30th Foot (The Herefordshire Regiment), 1872.
- (8304) Model of H.M.S. "Warwick."
- (8305) Model of H.M.S. "Queen Elizabeth."
- (8306) Model of a "Fairy" three-seater reconnaissance aeroplane. (Transferred from the Loan Section).
- (8307) Model of a Carden-Loyd tank tractor.
- (8308) Model of a Drummer, Infantry of the Line (Royal Regiment), 1790.
- (8309) Model of an Officer, Foot Artillery, 1800.
- (8310) Water-colour painting of H.M.S. "Inflexible," 1882.

#### LOAN.

- (3581) A Napoleon won by Major J. Mansel, 53rd Regiment, from the Emperor Napoleon at cards on board H.M.S. "Northumberland" on the voyage to St. Helena.

### Attendance.

The amount taken for admission during the past Quarter was:—

- £292 9s. od. in August.
- £192 18s. od. in September.
- £162 6s. od. in October.

**Purchase Fund.**

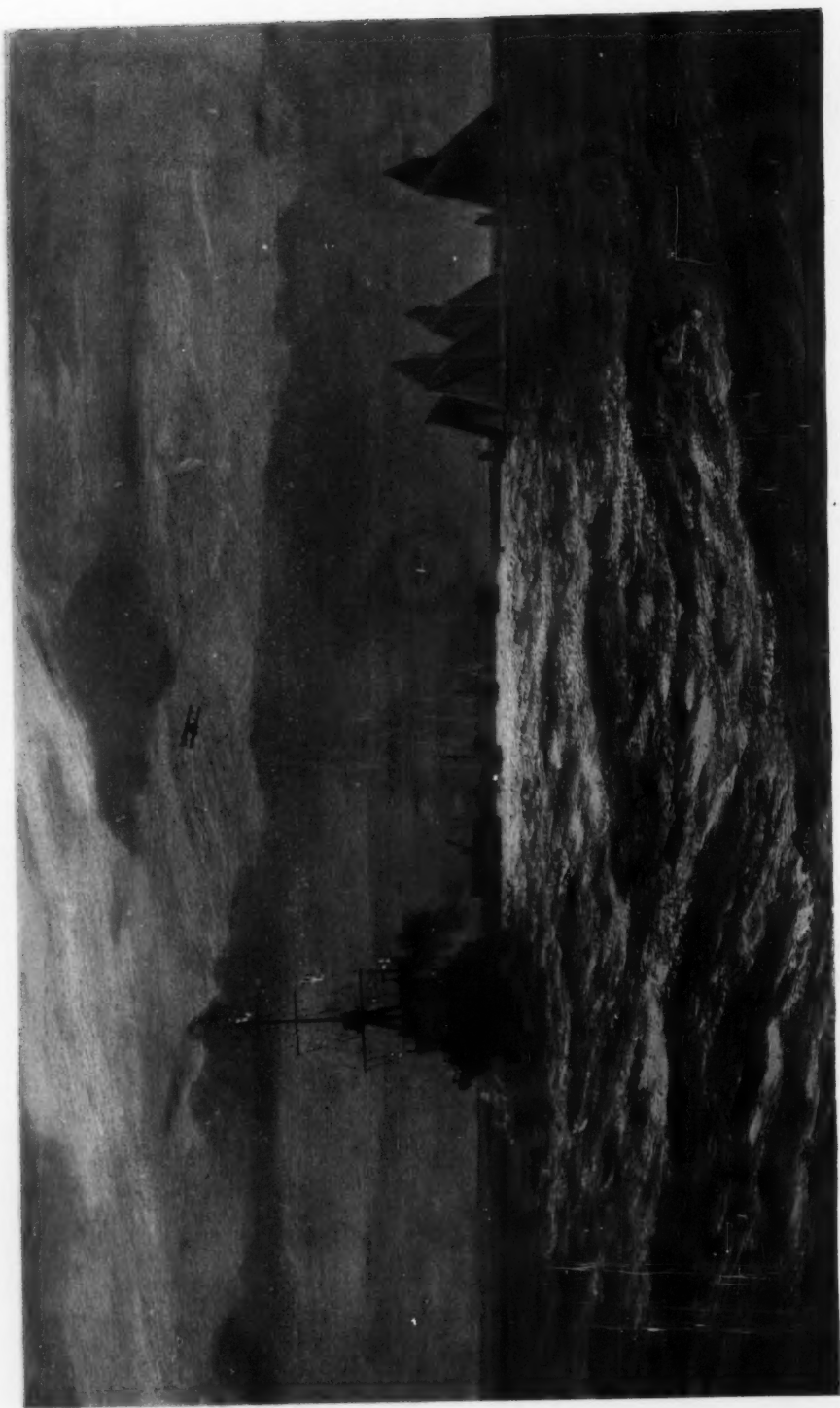
This Fund has been opened to assist in the purchase of new exhibits. The Council hope that it will receive the support of Members interested in the Museum.

	£	s.	d.
Balance in hand .. .. .	53	8	5
Sale of Surplus Exhibits .. .. .	30	0	0
Sum voted from General Account .. .. .	100	0	0
	£183	8	5

**Purchased :—**

Scale Model of H.M.S. " Warwick " ..	£20	0	0
" " H.M.S. " Queen Elizabeth " ..	100	0	0
Miniature ship models of Rival Squadrons :—			
" Falklands and Coronel " .. ..	18	5	0
	138	5	0
	£45	3	5





*From the picture by H. Ebrington Gibb.*

## THE MEDWAY DEFENCES

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# THE JOURNAL OF THE Royal United Service Institution

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## IS WAR POSSIBLE?

By "PONOCRATES."

**T**HERE must be many in the Services who are wondering at the present time how far, in view of the many movements towards permanent peace in progress, there is any possibility of war and any need for a deep study of their profession. Some examination of the steps which have been taken to prevent war, and the causes of war under modern conditions should not therefore prove unprofitable.

Before the Great War, when two Powers looked to be on the verge of fighting one another, the chances of some third party suggesting and possibly enforcing mediation depended largely upon how far the dispute concerned was likely to affect the interests of some Great Powers, or on the proximity of a possible conflict to such Great Powers. In 1899 the then Tsar of Russia called together the first Hague Conference which drew up a convention for the pacific settlement of international disputes. Twenty-six governments were represented at that meeting, but before the next meeting of the Conference in 1907, the Russo-Japanese War took place and no example exists of a case in which a war was averted by the action of the Hague Conference.

Since the termination of the Great War the situation has become very different. There is, firstly, the League of Nations, with its rôle

of mediation, investigation and recommendation in the case of disputes between two members of itself; and, secondly, the Pan-American Union which, though perhaps originally designed for economic purposes, has more recently added to its functions the duties of a peacemaker. Latterly every nation of consequence has adhered to a treaty known as the "Kellogg Pact," under which they renounce offensive war as an instrument of national policy. Last December, when Bolivia and Paraguay were on the point of opening hostilities, the good offices of the League of Nations and the Pan-American Union, as well as those of the Pope, were offered to prevent the clash. The participants of the dispute, as is known, chose the consideration of their problem by the Pan-American Union. More recently, when China and the Soviet began to quarrel in Manchuria, the United States and France—as the originators of the Kellogg Pact—amongst others, were prepared to act as mediators. It is thus apparent that there is considerable machinery ready to be put into rapid use in any direction where two countries appear likely to come to blows.

It is interesting to analyse the reasons for this marked development between 1914 and 1929. The idealist would place much of the undoubted progress made to the spread and increase generally of education, civilization and love of justice. The cynic, however, would point out that it is strange that in so short a space of time such great steps had been recorded for those reasons alone. Most will probably agree with the cynic that humanity has not improved to an extent comparable with the advance made in the machinery to prevent war. Undoubtedly a further factor militating against war has been the wide realization of the horrors and excessive suffering caused by the last Great War. This factor, however, one must recognise is only of a transitory nature and with the passage of time there will be few who remember what people went through during 1914-1918.

Apart from sentiment it is evident that there are definite factors working against war under modern conditions. From the beginning of the present century the thickly populated large industrial countries have gradually become increasingly dependent upon foreign trade, i.e., very few nations can now do without imports; and to pay for their imports they must provide exports. Foreign trade, it has been found from bitter experience, depends for its magnitude very largely upon peace; without security many trade undertakings, which at their commencement must be speculative in character, are not ventured upon. Apart from trade prospects there is the appalling loss of capital involved in a Great War. The following table shows the cost of the last war to the Powers concerned, both in men and money:—

EXPENDITURE OF MEN AND MONEY IN THE GREAT WAR.<sup>1</sup>

	Deaths.	Expenditure.
		£
British Empire .. .. .	1,089,919 <sup>2</sup>	13,577,900,000
France .. .. .	1,393,388	7,962,200,000
Belgium .. .. .	38,172	411,800,000
Italy .. .. .	460,000	4,432,700,000
Russia .. .. .	1,700,000 <sup>3</sup>	5,312,700,000
Portugal .. .. .	7,222	235,300,000
Rumania .. .. .	335,706	308,800,000
Serbia .. .. .	127,535	119,000,000
U.S.A. .. .. .	115,660	8,105,000,000
<b>Total Allies .. .. .</b>	<b>5,267,602</b>	<b>£40,465,400,000</b>
Germany .. .. .	2,050,466	10,341,100,000
Austria and Hungary .. .. .	1,200,000	4,068,400,000
Bulgaria .. .. .	101,224	261,000,000
Turkey .. .. .	300,000	451,800,000
<b>Total Enemy Losses .. .. .</b>	<b>3,651,690</b>	<b>£15,122,300,000</b>
<b>Total World Loss.. .. .</b>	<b>8,919,292</b>	<b>£55,587,700,000</b>

The loss in men is thus nearly 9,000,000. This figure takes into no account the many millions lost through influenza after the war, an epidemic which may well be attributed also to the war. The loss in capital to the world is shown to be £55,587,700,000. The loss in capital to Great Britain (£11,076,000,000), is reported to have been 34.49 per cent. of her total national wealth. Further, if we attempt to capitalise the loss in men, reckoning a man at £3,000<sup>4</sup>, the total world capital loss then was £82,345,576,000. To this must be added the cost of war pensions, for many years a heavy drain on national exchequers.

<sup>1</sup> From "Whitaker's Almanack, 1929," except the figure for the British Empire which has recently been revised by a statement issued by the Imperial War Graves Commission, and that for Russian deaths taken from "Losses of Life caused by War," by Dumas and Vedel-Petersen.

<sup>2</sup> This total includes 15,883 men of the Merchant Navy.

<sup>3</sup> This total is believed to be but a fraction of the actual losses of Russia in man-power, figures for which will probably never be known.

<sup>4</sup> Assuming the average man earns £3 a week, i.e., £150 per annum, he might be capitalised at £3,000.

These are stupendous figures and show well why Great Powers will always be loath to undertake a war. It is argued that certain nations, by repudiating the greater portion of the debts incurred during the war, or by a means of inflation which reduces the former debt either to negligible proportions or at least to a fraction of its original amount in present day currency, have escaped the capital loss incurred in the Great War. While it is true that they have escaped the need for finding the interest to pay for the amount of capital they used, it is an utter fallacy to imagine that they have escaped from the after-effects, for capital blown into the air, as in the form of shells, will be capital definitely lost for ever.

The forces ranged against the possibility of war are thus almost formidable enough to be reassuring. The man in the street may be forgiven if he cavils at expenditure upon armed forces. His view is reflected in the various attempts that have been made to bring about general disarmament, and the partial disarmament already effected, notably at the Washington Conference in 1921.

But before the nations of the world entirely destroy their existing defence forces and, what is perhaps more important, abandon the study of war, it were well to take note of factors which may cause war in spite of the precautions which have been taken against it. In order to reach a safe conclusion it might be well to look ahead, not merely ten, but perhaps fifty or a hundred years. It is true that the situation after 1815 was not quite similar in that civilization has made considerable progress in the past century; nevertheless the present situation is not entirely different, and within a century of the termination of the Napoleonic Wars the world experienced many other big wars.

In the earliest days war was, of course, brought about on the flimsiest pretexts, often being the personal whim of some ruler desirous of revenging a wrong or acquiring a bride or a throne; but in more recent times, since the people of a country have more and more had some say in the declaration of a war, and the genuine support of the people has been necessary for a ruler to wage a campaign successfully, it will be found that the causes of war may be classified under two headings—(a) wars in support of a principle, and (b) economic wars.

As regards class (a), one cannot disguise that wars have frequently been advertised as being in support of a principle, whereas in reality they have been equally economic wars, if not primarily so. Under this class come wars of religion or in quest of freedom—probably the campaigns of the Crusaders and of Cromwell in England may be put down as truly wars in support of a principle. The many nationalistic rebellions that have taken place have had, in most cases, as a basis an economic gain

as well as a gain of independence. The American Civil War, though primarily fought on the slave issue, as far as the South were concerned, also had an economic aspect in that the loss of slaves meant eventually a considerable economic loss. Wars brought about in an effort to maintain the balance of power, again, are less wars in support of a principle than those fought for economic ends. Thus, while the British Empire entered the Great War truly in support of the torn-up "scrap of paper," at the same time it was obvious that a German hegemony over Europe, and later over the world, would have been a matter of vital economic interest to the Empire.

Class (b), the economic war, may be more colloquially described as a "bread and butter" war. The strongest instinct in animal life, and in men, is the desire to live and the desire to provide for dependents. Any threat, therefore, to food supply has from the very earliest days caused an immediate reaction. However civilized and noble-minded we may become, this truth remains.

In considering the various agencies working for peace it would seem that under modern conditions the majority of class (a) wars, those in support of a principle, would allow themselves to be adjusted by one or other of the organizations brought into being for that purpose. Compromise upon a principle is conceivable. It is not so easy, however, to see how class (b) wars, fought for an economic necessity, can be dealt with.

To-day, "bread and butter" has a wider interpretation than in the early days. It may be now defined as the standard of living, and anything which affects the standard of living can be taken as a threat to the economy of a nation. Gradually the standard of living of civilized nations is being raised and no nation will contemplate a reduction in the standard. This standard has depended hitherto upon the total productivity of a country in relation to the size of its population; thus, while nations were comparatively short in numbers, and the natural resources of their dominions were only partially exploited, there has been no need for difficulties to arise. But the large nations of the world are increasing their population year by year, and while there may yet be ample undiscovered resources in the world, it is possible to see a time when few additional resources can be counted upon. If populations continue to increase at their present rate it would appear only a matter of time before the standard of living, at least for certain of the nations of the world, must remain stationary and then go down.

Even under present conditions there are many ways in which the standard of living can be affected. Thus any highly industrialized nation, dependent upon foreign trade for its prosperity, which suddenly

finds its export or its import trade interfered with, is immediately placed in a position of difficulty. In such countries unemployment must immediately follow. Persistent unemployment on a large scale, combined with a descending standard of living, may, even in the most highly disciplined races, lead to internal revolution. Can one suppose that under such conditions governments would be ready to refer their troubles to an international body, and, should they do so, can one imagine other interested parties handing over freely economic advantages in order to ameliorate the situation of the suffering nation?

It would be undiplomatic to select the case of any of the chief Powers of the world to-day and examine their case here too closely, but anyone who cares to do so can consider the situation of all the great industrial Powers, all increasing their populations and struggling for markets, raw materials and foreign trade. While for the immediate future there may be scope enough for all, is there any permanent assurance that all these Powers will for ever have a sufficiency?

The economic happiness of industrialized Powers is very delicately balanced. A sudden development may easily improve it enormously or may wreck it. For example, a scientific discovery, such as the easy conversion of coal into oil or the finding of minerals, may make such a difference to a country that even its war debt may be regarded with equanimity and the possible capital losses in another war may present quite a different aspect. On the other hand a failure of crops, or a collapse of the export market for some unforeseen reason, may in a short space bring a country to the verge of ruin. The unforeseen nature of these possibilities makes their consequences particularly dangerous. As a further example may be quoted the discussions on deliveries in kind at the Hague Conference on the Young Plan, during which the export or non-export of an article, such as coal in bulk, from one country to other countries was seen to be a factor of first-class importance. The sensitiveness of Great Powers to economics is seen in their handling of any occurrence which touches upon regions and spheres of influence which they, for economic reasons, regard as highly important. Each of the Great Powers, it will be found, has such regions in which it will brook no interference. The reservations which various nations published at the time they agreed to the Kellogg Pact bear witness to this. There is a constant danger that quite accidentally the economic interests of one Great Power will run foul of those of another.

Were all the world of the same religion and in the same state of civilization there might be some hope of economic troubles at least being settled by discussion and arbitration, though even that is doubtful. Further, were all the nations of the world ruled by their enlightened

people themselves there might again be hope. The Anglo-Saxon nations, themselves highly democratic and imbued with many of the principles which follow from education and civilization, are very apt perhaps to over-estimate the standard of fair dealing prevailing throughout the world. Even if they do not "covet their neighbour's goods"—having, incidentally, a fair plenty—it does not follow that other countries, not subscribers to the same commandment, will have the same views. It is to be remembered that since the war democracy has had a set-back. In quite a number of countries power is less in the hands of the people and more in the hands of individuals.

So far the probability of great wars has only been discussed. Under the heading of war should also be considered small wars and revolts. The small war is always more likely than a great war in that one party to it is very often an undeveloped race caring little for world opinion. Revolts, again, can too often be described by Great Powers as a private matter, of the exertion of administrative authority within their own sphere of interest, into which the investigation of other Powers is not permitted.

To sum up, then, what are the possibilities? It will be readily seen that the world is very far from being secure from war, particularly if the problem be considered over a considerable expanse of years. Apart from the constant chance of small wars against the undeveloped races of the world, and police duty on a scale verging on war, it is difficult to see how, when a first-class economic issue appears between two nations, hostilities can be avoided. If the issue be sufficiently large it is not easy to conceive one or both of the possible combatants agreeing to intervention by some international League of Powers. There remains the possibility of such an existing League enforcing its will and insisting upon peace. When the probable cost of such a policy is reckoned up (as shown in the foregoing table), some hesitation on the part of Powers not directly concerned is understandable. If, perchance, the productivity of the world were to increase materially through scientific discoveries or other means, of course, the great cost, particularly past costs of fighting which hang over so many of the nations at the present time, will lose their effect as a pacifying factor. When the many "bread and butter" issues of the world are considered, even at the present time it would seem safe to prophesy that within a century war is not only possible but certain. If this be a reasoned statement, nations would do well neither to drop out the study of war nor to allow their defence to grow so weak as to be irreparable.

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## THE FLEET OF THE FUTURE

BY CAPTAIN J. V. CREAGH, D.S.O., R.N.

On Wednesday, 6th March, 1929, at 3 p.m.

ADMIRAL SIR W. E. GOODENOUGH, K.C.B., M.V.O., in the Chair.

THE CHAIRMAN introduced the Lecturer.

### LECTURE.

**W**E have heard it stated that the capital ship is dead, that the submarine will be the dominating vessel, that surface ships will be superseded by aircraft. Such nebulous suggestions, however, are apt to produce a hazy and confusing picture—a kind of futurist fleet—rather than a fleet of the future which bears some relation to requirements, and is based on principles which do not alter though conditions and methods change.

I suggest, therefore, that we divide our subject into three parts; and :—

- (1) Consider what sea warfare is and deduce certain principles. Then visualize sea warfare in the future and see whether the capital ship is necessary ;
- (2) Consider the development of the weapon and its carrier, and subsequently investigate new agencies in the light of the principles we have discovered, and see how these factors will affect or modify the fleet of the future ;
- (3) Endeavour to visualize in what direction these changes may or ought to lead us ; but it must be noted that we can only base these investigations on political and other considerations as we now see them.

At the outset, let me say that I believe that any changes will be gradual and evolutionary rather than revolutionary.

### I

#### THE FUNCTIONS OF A FLEET.

The object, let us remember, of any form of war is to bring pressure on the enemy, to make peace on our own terms. If we turn to the history of this country we find that in the early days ships took part in raids, invasions and military operations ; but these were usually in the

nature of land warfare with a territorial objective in view. The ships were, in reality, transports, fought and mainly manned by troops, and their movements were controlled by soldiers. It was not until we became a maritime nation and developed our seaborne commerce which required protection, or until we were able to exert pressure on the high seas by the capture of, or damage to, the seaborne trade of an enemy, that we began to play a real part in sea warfare as we know it to-day, i.e., warfare with a maritime objective.

It was the development of our Mercantile Marine that gave our commerce an impetus; it was due to our armed ships that we were peacefully freed from the clutches of the Hanseatic League and allowed to benefit from our own trade. The Navy itself has evolved from our Mercantile Marine; in fact, the latter is the parent of the Royal Navy.

Furthermore, trade and war appear to go hand in hand. It is remarkable that since we became a maritime nation nearly all our great wars can be traced either to the desire for the expansion of our own trade, to threats against our trade, or to fear that it may be threatened.

By denying the use of sea communications to the enemy, we can ruin his trade and thereby those sources which enable him to prosecute the war. We can divert to our own use goods found at sea and intended for him; this will cause prices in his country to soar, and necessitate men being employed in factories and to cultivate land when they would otherwise be available for the fighting Services. The difficulties and cost of providing the needs of those Services and of the civil population will increase as time goes on. Incidentally we may compel him to maintain troops to defend a coastal area when they are badly needed elsewhere.

On our side, the free use of sea transport means that we can take offensive action when and where it best suits us, while it enhances our own security. Further, it materially assists the co-operation of our sea, land and air forces.

With the advance of civilization and the consequent growth of necessities, not only does trade expand but it becomes of more vital importance. Further, like a stream, trade follows the line of least resistance; the sea is its natural path, since it provides the most convenient as well as the most economical form of transport. Let me give you an example; a tramp steamer of about 5,000 tons, net tonnage, and 480 feet long can carry approximately 12,500 tons of coal; to transport that coal by rail would take seventy fairly long trains of about twenty trucks each which, together with the engines and brake vans, if placed end to end would be five and a quarter miles in length. If we consider the sidings and shunting necessary, I think a railway company which

transported this coal through a Channel tunnel in a day would not do badly. It would mean a train passing through about every twenty minutes of the twenty-four hours.

Now for economy: rates and freights vary, but, as an example, under conditions prevailing last year it would have cost about £700 more to transport this amount of coal by rail from Swansea to London, a distance of under 200 miles, than by sea from Swansea to the River Plate, a distance of over 6,000 miles.

We can safely assume that sea warfare will be of greater importance in the future than in the past. On the other hand, we are unlikely to have such favourable geographical conditions as in the late war, and we may not be able to limit the surface raiders to the small number which were then able to operate.

In a future war it is probable that trade will be driven into convoy in the early stages. There will be a system of a series of convoys, each protected by escorts, and all covered by a powerful main force. If this main covering force can seek out and destroy the enemy main force, the operation of controlling sea communications can then be carried out with little interference, but until such a meeting takes place, sea security must rest, ultimately, on a fleet in being, the principal units of which are of that type of predominant surface ship which we call the battleship.

Had it not been for such a covering force, i.e., the battleships of the Grand Fleet, it would not have been possible for us to land our armies or to assist our allies with our Mercantile Marine in the late War.

We see, therefore, that the control of sea communications is dependent on a fleet capable of destroying the enemy main forces in battle. This means that the battleship is not dead. Later, we will endeavour to visualise what manner of ship she may be.

## II.

### NEW FACTORS.

We now come to the second stage: the development of the weapon and its carrier, and new agencies. In considering these, I would like you to keep in mind those three principles: Offensive Power, Security, and Mobility.

In the last war we were able, more or less, to limit operations, as far as surface craft were concerned, to the North Sea. If you look at the map you will see how small this area is. In the future the fleet may have to operate in areas where distances are measured in thousands and tens of thousands of miles rather than in the hundreds we had to

consider then. It follows that it will be necessary for future warships to possess great mobility, by which I mean power to proceed where and when necessary and to maintain themselves there as long as required. Mobility is not only a question of endurance and speed, but also of reliability and independence. Mobility, as we shall presently see, is intimately connected with offensive power and security, whilst the method of propulsion plays no unimportant part.

In the earliest days we read of oars being used; then we hear of trade taking to the sailing vessel with its far greater carrying capacity. This change was adopted to some extent by the fighting ship, but in those waters suitable to its tactics the galley was retained for several centuries, and many a fine sailing ship fell to the onslaughts of its more nimble adversary. It was the increase in the size of the gun that finally sealed the doom of the galley. Though the latter could carry the larger gun the number of these was restricted, whilst the sailing ships were able to carry them in large numbers and to accommodate the personnel required to work them. It was volume of fire that killed the galley and gave security to the sailing ship.

Again, the sailing ship, a vessel of great strategic mobility, gave place to the steam vessel. There was some delay in the adoption of the steam vessel as a warship, for it lacked mobility. But with increased reliability and endurance they were adopted on account of the vulnerability of the sailing ship to the heavy gun and explosive shell which the steamer could carry and the sailing ship could not.

Of late years offensive power has continued to grow with the development of the gun, and security with that of armour; while mobility has been increased by the adoption of oil fuel.

We have seen how the fighting ship has followed the trading vessel in the matter of propulsion, sometimes slowly, sometimes rapidly. This is due to the necessary compromise between offensive power, security, and mobility. We now see the period of transition from the steam driven to the motor driven ship. In all these changes it was fire power, that is, the power of offence, which was in the end the deciding factor when the other factors, mobility and security, which have to be taken into consideration, have permitted it. One must be able to take the weapon where it is to be used, at the time it is to be used, and it is useless having the offensive power of a Goliath if one is vulnerable to the attack of a David. Throughout these changes, and sometimes assisted by them, we notice the development of the offensive power, and how this itself gave security, and we see additional security introduced by armour.

The development of an underwater weapon; the torpedo, with the torpedo boat as a carrier, was followed by an anti-torpedo armament. With the increase in size of the torpedo and the mine it became necessary to increase the anti-torpedo armament and to add to security by bulges, increasing sub-divisions in watertight compartments and by additional pumping and draining arrangements.

You will note that the increase in offensive power as well as the adoption of new types of weapon necessitate additional means of security, and with the introduction of mechanized propulsion, the necessity for carrying sufficient fuel, all tending to increase the size of the ship; it is this latter which is the real limiting factor.

Now, let us turn to new agencies. In doing so it is well to remember that the mystery surrounding the unknown is wont to lead to it being credited with exaggerated powers which disappear on closer acquaintance.

#### THE SUBMARINE.

The submarine came greatly to the fore in the late war on account of its attacks on trade, although it was not really a good type of vessel for such work. It possesses, however, an important characteristic, in that, under certain circumstances, it is able to operate in waters denied to surface ships. On the other hand, it is naturally very vulnerable, compared with a surface ship; if holed whilst on the surface it cannot dive; if holed under water, lack of buoyancy would probably seal its fate. But the submarine derives security from the fact that it can remain unseen, and thereby acquire greater freedom to use its offensive powers. The torpedo, which can be delivered unseen, is therefore its natural weapon.

In the late war, offensive and defensive measures were taken to counter its activities, and these achieved a certain amount of success, but did not advance very far.<sup>1</sup> One of the most efficient means of destroying it was the depth charge, but counter-attack was rarely possible until a submarine had fired a torpedo, and even then it was frequently unsuccessful. No efficient method of locating a submarine when unseen had been evolved, as far as surface ships were concerned.

At a lecture given by Mr. Wood at the Institute of Electrical Engineers in December last, he demonstrated the use of a new French invention—an instrument for depth sounding. I will read you an extract from the report in *The Times* :—

<sup>1</sup> The degree of success achieved by the various antidotes to the submarine used in the War is shown in a table published on p. 333 in the JOURNAL for May, 1929.—EDITOR.

"There is not a depth in the ocean which could not be sounded. This is done by making a sound on the surface and then listening for the echo from the bottom. From the time taken for the sound to travel the depth could be determined.

"The new instrument adopts a principle made use of in wireless—the beam. The beam could be turned about in any particular direction and as the energy does not spread, the reflection from a comparatively small object, a submarine or an iceberg for instance, can be detected. A commercial type of apparatus has been produced."

The claims made for it may be over optimistic, but an instrument of this sort would, obviously, considerably reduce the offensive power of the submarine.

From the developments taking place it would seem that maritime powers are constructing submarines for work with the fleet. If such vessels are to have a tactical value they must have a good margin of surface speed over the capital ship. I fancy this will be difficult in view of the probable increase in speed of the battle fleets, and we must bear in mind that offensive power, security, and mobility are a matter of compromise.

Submarines will certainly be of value for distant reconnaissance, and this value will be greatly enhanced if they have the co-operation of aircraft. I do not think, however, they will have it so much their own way in attack on trade. On the other hand, we may see them in the form of escort vessels, making attack by surface craft more difficult. This to me seems a more correct role for them; because an enemy whom they might not be able to pursue through lack of speed, is tempted to come within their range, and the surface raider intent on the destruction of other craft, will either be diverted from his object or he will not be able to take all steps necessary for his own protection against the unseen blow.

It does not seem reasonable to expect that vessels, so vulnerable to surface attack, will be designed to fight on the surface with an offensive gun armament, unless it be for attack on undefended trade. If used by a ruthless enemy we can visualize special hunting craft protecting convoys; the enemy would naturally counter these by heavier craft co-operating with the submarines. So once more we begin to find ourselves involved in that inevitable circle centred on the covering force.

There are no signs that the submarine will be the dominating vessel of the future, but it has added considerably to the difficulties of the main fleet. The movements of the fleet are certainly much curtailed and hampered by the submarine and those important considerations,

mobility and economy of force, have been reduced, in the case of heavy ships, by the necessity for escort by anti-submarine craft.

Close blockade by patrol off enemy coasts has been rendered impracticable. As the tendency will be for naval operations to take place further from the enemy coasts or bases it may possibly have the effect of increasing the problem of bringing an unwilling enemy to action.

#### NOXIOUS GASES.

Before coming to aircraft I would like to discuss another new agent, noxious gases.

Aircraft enthusiasts have emphasised the importance of this form of warfare. I think its effect is exaggerated in the mind of the public. It is not as deadly as some other weapons ; only about 2 per cent. of casualties due to gas were fatal in the late war, and it is not easy to transport it in sufficiently large quantities to be effective on a large scale.

Its successful use against a fleet at sea is problematical, and it is unlikely to be sufficiently effective to justify the employment of aircraft for this purpose when they might be more profitably engaged in other less uncertain ways. It might under suitable conditions prove effective against ships in harbour, but such an attack would greatly depend on control of the sea communications, for it must be remembered that if aircraft are used for such a purpose they and their equipment will have to be carried to within striking distance of that objective.

#### AIRCRAFT.

As in the case of the submarine, the advent of the aeroplane has modified naval warfare. It will certainly increase the difficulty of operating off the enemy's coasts. It will lessen that element of surprise which has on occasions been made so much use of at sea. Even if the recognised international rules are adhered to, it will contribute to the difficulty of protecting our trade.

Again, like the submarine, the aeroplane is very vulnerable, due in this case to its lack of buoyancy in the air ; slight damage is likely to bring it down. For security it has to depend on speed, its small target area and its climbing powers.

As an offensive agent it is open to attack without being able to reply until it has reached the position necessary to deliver its blow. Its offensive power, security, speed and endurance are each a matter of compromise. Greatly increased offensive power would result in a slower and larger target with reduced climbing capabilities ; it would also render the aeroplane more susceptible to counter-attack by other aircraft specially designed for this purpose ; furthermore, its endurance

being lessened, it would be liable to air attack, whilst still outside striking distance.

For these reasons it would seem that there is a limit to the size of the aeroplane which could be usefully employed against the surface warship, irrespective of the inherent limitations due to constructive difficulties. Restrictions on the offensive powers of the individual machine may, however, be set off by the volume of fire obtained by using numbers.

A misleading and subtle claim made for aircraft is extreme mobility. After all, air forces with their equipment for bases and personnel have to be transhipped to the theatre of war to much the same extent as the other forces. In certain cases, even though the distances are comparatively small, where it would be necessary to fly over hostile or neutral countries, the aircraft themselves will need to be so transported.

From this it follows that if the fleet is to have the co-operation of air forces, the only reliable method of ensuring co-operation would be to carry aircraft in ships as part of their equipment.

The crux of the whole question, as far as the fleet is concerned, is to have sufficient air power at the right time and place.

#### THE AIRCRAFT CARRIER.

The number of aircraft it is possible to carry in warships is strictly limited, if we are to maintain the maximum offensive power for their special roles. The present method of carrying numbers of aircraft is by aircraft carrier. The vulnerability of these vessels to all forms of attack, even by small surface craft, and their difficulties in operating, are patent to anyone who has considered the matter. But they are also necessary to the aircraft flown off from other ships of the fleet, for these latter cannot be left to fall into the sea, or perhaps be interned in hostile or neutral territory; in either case the craft is lost and, what is more important, the personnel.

At present I can see no alternative to the carrier, but I feel sure that a new type less vulnerable, with greater security, will be evolved. We are not limited by numbers beyond total tonnage and it may be that a smaller aircraft carrier will appear. At present they are particularly susceptible to unseen attack by light craft which are less visible at night.

I have seen it suggested that a battleship aircraft carrier may be a solution of the difficulty, but I think a short examination will show that, due to the necessarily diminished offensive power and security, such ships cannot survive against those whose offensive power and security remain unimpaired.

Though already specialized to a certain extent it is reasonable to suppose that the tendency must be for yet greater specialization in the aircraft themselves. The object is to develop types which can be carried and operated in greater numbers from carriers and other surface craft, while being up to their full standard of efficiency in the air.

The great value of the aeroplane to the fleet as an offensive agent seems to be that it possesses in some degree the nature of a long range projectile and that it can be launched from the fleet and used in attack beyond the range of other projectiles. It may also provide a means of bringing an unwilling enemy to action.

It does not require great imagination to visualize aircraft as the striking force, but, the carrier being vulnerable to surface attack, once more we become involved in the chain of thought leading up to the capital ship.

The gun of the capital ship is the most effective in actions between ships of this type and must naturally remain the main weapon of offence, while the aircraft is a necessary adjunct of the gun to assist the capital ship in bringing superior fire power against the enemy in battle.

To this end aircraft may co-operate actively or by attempting to neutralize the enemy's gun power ; actively, by itself contributing to the volume of fire or assisting the gunfire ; and by endeavouring to neutralize enemy gunfire in a number of ways, such as, for instance, damaging the enemy, drawing his fire whilst in action, or causing the enemy to expend ammunition which may be necessary for other purposes.

#### CONTROL OF THE NAVAL AIR ARM.

This new weapon is essentially a naval weapon of the greatest importance. It is becoming more specialized every day. Naval piloting is a specialised branch and it differs greatly from that of the land pilot ; though the initial training is similar, special training must follow. Types of aircraft, unsuitable for land warfare, are adopted for sea warfare and evolution is continually taking place. So important is this new weapon to the fleet that it is difficult to understand why the Navy has not yet been given complete control of its own air arm : it would appear as reasonable for the Royal Artillery to supply the guns of ships and be responsible for the training of the guns' crews.

In the flying boat I had hoped to see the future destroyer : a type of craft normally using the sea, yet capable of taking the air when required. But on more mature consideration my hopes gradually faded. There are many difficulties which have to be overcome in the flying boat. Their sea-keeping capacity is limited ; they also suffer from liability to

damage in a seaway and difficulty in rising in a slight sea. There is little prospect of increasing their size owing to constructional difficulties, the weight of material rising rapidly in proportion to the added efficiency. In spite of their endurance being greater than that of the aeroplane, they are not sufficiently reliable in the strategic sense. I cannot say that I yet see any prospect of their being able to take the place of the fleet destroyer.

#### SURFACE SHIPS AND THE AIR MENACE.

The next point is to consider to what extent the offensive air power of the enemy will affect the surface ships of the future.

Though bombs have not the penetrating qualities of the ordinary projectile the deck protection will have to be increased, and also protection for the crews, particularly in small craft, against machine-gun fire from low flying aircraft.

The effect of exploding bombs under water alongside is similar to the effect of exploding torpedoes, though as a rule the effect will not be so severe and the counter to this from a ship construction point of view is similar to the anti-torpedo and mine protection, namely bulges, increased subdivision of watertight compartments, etc. Special protection against gas attacks will also be necessary, such as airtight compartments, special ventilation and so forth.

Though anti-aircraft gunnery has made a considerable advance since the war, it is yet in its infancy, but even so it has considerably increased the difficulty of the aircraft in hitting a ship, and I can see no reason why it should not continue to improve sufficiently to make aircraft attack a very hazardous proceeding.

It might be of interest to read the following extract from a statement issued by the Navy Board at Washington.

"It is held by many that the best defence against aircraft is other aircraft, but the Board believes that in defending a battleship against aircraft, the anti-aircraft gun, which is always ready for use, probably holds the first place, and as it improves in design and skill in use, it will in the end be found quite efficient to ensure reasonable security to a ship against bombing attacks."

In any case aircraft may exert a considerable effect if they co-operate during an action, and attack with torpedoes or bombs and machine guns, in sufficient numbers, at the right time and place. It is the last which seems to be their greatest difficulty in view of the other functions that they will be required to carry out in sea operations.

## III.

## THE FLEET OF THE FUTURE.

It remains for us to consider the third part of our problem, that is to endeavour to visualize in what direction these new agencies and inventions may or ought to lead us.

Numbers of cruisers, armed merchant cruisers and auxiliary craft will be employed in trade defence, in convoying troops and air forces engaged in operations overseas, and in supplying their wants, apart from the ships required for offensive purposes against the enemy lines of communication. We have seen that all these naval forces require the cover of a battle fleet.

This force must possess at least equal offensive power to that which it may encounter, and it must possess sufficient security and mobility to allow it to operate when and where required. There is, therefore, always a tendency to increase the size of the capital ship. The natural limitation is governed by the depth of water which it may have to use and the size of the harbours and docks available at the various bases. Fortunately for the pockets of all concerned a limit was placed on the size and calibre of guns of these craft at Washington.

Again, new weapons and new inventions tend to increase the number of types of craft auxiliary to the capital ship in order to add to its offensive powers, either by active co-operation or by achieving a measure of protection for it, in order to allow it to exert its maximum offensive power. This multiplicity of types of craft introduces complications in strategy, such as restrictions due to sea-keeping qualities, or lack of mobility. The ideal would be to embody all their various functions in one type, but they do not employ the same tactics, these being governed by the main weapons they carry and the duties they are required to perform. On the other hand, expense is an important consideration. There must, therefore, be a natural tendency to restrict the various types as much as possible and, where two or more functions can be carried out without unduly affecting strategic or tactical utility, this will naturally follow. There is, however, a danger that this compromising may be overdone.

## AIRCRAFT AND CRUISERS.

I have heard it suggested that with aircraft we shall have less need for cruisers for reconnaissance. I, personally, do not incline to this view. To me it seems that there may even be greater need for them. Whether we will ever have sufficient cruisers with the main fleet is another question.

There are three methods of reconnaissance: by aircraft, surface craft, and submarines. There are conditions which will suit the characteristics of each type of craft. I will, however, limit my investigation to the first two, namely reconnaissance by aircraft and surface craft.

There are certain limitations on aircraft reconnaissance. They are not always available, owing to weather conditions, and the difficulties of accurate navigation in the air are considerably greater than on the sea.

There are two chief needs in reconnaissance. Early information and reliable information. Error in reconnaissance is a relative matter. A large error in distant reconnaissance is equivalent to a small error close to. Whilst aircraft are necessary for distant reconnaissance, surface craft are necessary to correct or check it, for we must remember that unreliable information may be more dangerous than no information at all.

For these reasons we must have surface as well as air reconnaissance. Co-operation enhances the value of such reconnaissance. But with the advent of aircraft and increase in speed of surface craft, extended reconnaissance becomes of greater importance and there is every incentive to extend it to its limits, if for no other reason than to prevent surprise attack by air.

Aircraft, launched from advanced cruisers, may be a solution. On the other hand it would not be surprising to see a small type of cruiser aircraft carrier for co-operating with advanced surface forces.

There is always the difficulty of "finding, fixing and finishing" the unwilling enemy. Greatly extended reconnaissance may assist in "finding" him. It may add to the possibility of "fixing" him by night attack, in order that the main fleet may "finish" him later. Such reconnaissance would on the other hand reduce the possibility of unexpected attacks by night and surprise attack by day on our fleet. For these reasons I believe we will find greatly extended reconnaissance necessary and the cruiser as essential as ever.

The cruiser will require sufficient speed to fulfil its role as a scout and give it a reasonable chance of being able to rejoin the main force in time to co-operate in battle.

#### THE DESTROYER.

I have also heard it suggested that the aircraft or the cruiser may take the place of the destroyer. But in the destroyer we already see a compromise, for they may be expected to:—

- (1) Attack the enemy with torpedoes;
- (2) Repel enemy torpedo attack;
- (3) Act as screening vessels and carry out other minor duties.

The offensive power of the torpedo is limited, but, as in the case of other weapons, numbers make up for this deficiency.

The torpedo is easily avoided, therefore the correct method of delivery is by unseen or surprise attacks and, when this is not possible, by attacks well pressed home to reduce the possibility of the enemy taking effective avoiding action.

The torpedo is perhaps the best weapon for night, and it is more suitable for attack against heavy ships than small. It will, therefore, be readily understood that though the principles governing the tactics of the gun and torpedo may be the same, the methods of the application of those principles are entirely different, requiring different types of vessels.

The smaller the vessel, provided she has high speed and possesses sufficient sea-keeping qualities, the better the torpedo carrier. A flotilla of such vessels is easily manœuvred and can carry a great volume of torpedo fire, which in spite of heavy casualties, will yet remain a potent threat. Such vessels are not efficient gun carriers for the heavier type of gun armament necessary to stop the attack of a flotilla during the short time available. We see in all navies a tendency to increase the size of the gun, even up to 5.5 or 5.9 inch, which calibre will be of little use in a seaway that does not affect the firing of torpedoes.

Such increase in the gun armament naturally restricts the offensive value of the destroyer as a torpedo carrier. Cruisers would be still less suitable, as well as costly and uneconomical for such purposes, if available in sufficient force. Aircraft would not be able to produce the volume of fire, but their co-operation by day at all events would add considerably to the value of the offensive action owing to the complication of the necessary defence measures.

Destroyers have their limitations; their chief defect is insufficient mobility. But if the torpedo is considered of sufficient value as an offensive weapon, which I think is the case, the destroyer is likely to remain. It may become a cheaper vessel, more in the nature of a torpedo carrier, pure and simple, or possibly two types may be evolved: a torpedo boat and a small cruiser, each more suitable for its special functions.

#### THE BATTLESHIP.

But, ultimately, everything centres round the capital ship, so I think it may be worth while to consider a possible forecast of this type.

We have seen the warship follow the merchant ship in the matter of propulsion, and usually improve on it. We have seen the constantly increasing offensive power limited by size, but not by efficiency. Now

the Germans, the first nation to be so limited, have shown us what they consider possible.

A motor-driven pocket battleship of high speed with an endurance of 10,000 miles at 20 knots this German ship is designed to steam from London to Fremantle at this speed and still have a margin. A new and improved type of Diesel motor has been designed and it seems that the motor will be the battleship engine of the future and that the desired mobility is within sight. Yet what would a 35,000 ton ship cost if a 10,000 one is to cost over £4,000,000? And what would the taxpayer be called upon to pay if fifteen were built? Over £200,000,000 for construction of capital ships alone.

It would seem unreasonable to spend large sums of money on ships which are built primarily to counter other similar ships, the offensive power of which has been limited, when a large proportion of such expenditure could be saved by all concerned through such a simple method as mutual agreement to restrict further the limitation, provided such limitation allows of sufficient security against vessels of other types. This seems the logical sequence to the Washington Conference which was a first step in this direction.

The limitations imposed at Washington were seemingly woven round the offensive weapon, the 16-inch gun, and the demands of security to meet the threat of new agencies.

In all probability the capital ship to-day is less vulnerable to attack by torpedo and bomb, by mine and gas, than ever it was. The Germans propose to carry 11-inch guns in a vessel of about 10,000 tons which is also said to be protected by the stoutest underwater protection ever incorporated in any ship. It would seem reasonable that the 11-inch gun should be the limit of the weapon, and that a ship of say about 12,000 or 14,000 tons might embody what is required in the way of further protection. This is merely a suggestion; a smaller gun and smaller type would do equally well, but agreement would have to be far reaching, and we know the difficulty of agreement even amongst a handful of nations with the same end in view. The reduction in the cost of construction due to smaller types would be only a proportion of the total saving:

Following on these lines there seems no real reason why the present limitations affecting cruisers should not be further reduced provided that the offensive power remains greater than that of the armed merchantman, and that the security and mobility that can be provided are sufficient.

With 10,000 ton cruisers now built, building, and projected, this may, perhaps, be too much to expect in the near future, but with the

realization of the ever increasing cost of construction, another step in the reduction of armaments may follow by general consent.

#### IV.

##### SUMMARY.

In effect, therefore, my idea of the fleet of the future is that it will consist of a much smaller type of capital ship but one with higher speed. This may well retain the name "battleship," for on it the issue of a fleet battle will depend. The larger auxiliaries will consist of cruisers of a smaller type than the present 10,000 ton ships—perhaps two distinct types; and aircraft carriers of a new design,—less vulnerable. I believe we shall continue to have surface torpedo carriers, but that the new type of Diesel engine may enable the submarine to become of greater potential value as a fleet unit.

But whatever its composition, it will be more necessary than ever that, in another war, the fleet should have freedom to use its powers without unnecessary restrictions. It seems reasonable, therefore, that the Navy should have unfettered control of the weapons which are essential to it.

Lastly, the necessity of a real understanding of, and the closest co-operation with, the other Services cannot be exaggerated, whilst a close liaison with the Merchant Navy is essential in the defence of our Empire.

##### DISCUSSION.

CAPTAIN E. ALTHAM, R.N.: The lecturer has reminded us of certain principles of war; but I suggest that "principles" are liable to remain mere abstract ideas unless they lead to practical application in the form of sound precepts for the conduct of war, weapons correctly fashioned for its needs, and a system of training in the use of those weapons which will produce an intelligent and efficient personnel. It is the latter, above all, that we shall require in the fleet of the future.

Captain Creagh referred to the principle of the offensive as interpreted in a new design of battleship. It seems to me we should keep a very careful eye on the new German ship to which he alluded. *Le Temps*, early this year, remarked on it at some length. A division of four such ships, said the French paper, will be able to "keep the freedom of the Baltic," or, in good German, "exploit the uncontested hegemony of that sea." They will isolate Poland from her allies and ensure the military co-operation of Germany and East Prussia. Owing to their shallow draught they can manoeuvre in waters where they will be comparatively safe from submarines. Thanks to their speed and radius of action, a German division of 10,000 ton battleships will be able to cruise with impunity in many other seas besides the Baltic. *Le Temps* further raises the pertinent question, what existing type of warcraft can compete with this new type; the existing battleship cannot catch it and the 10,000 ton cruiser cannot face it; the battle cruiser alone can do both, but it has nothing like the same radius of action.

If these ships come up to expectations, this comparison with existing classes seems sound enough, and I may remind you that Japan and this country are the only two nations which possess battle cruisers, and which, therefore, are at present in a position both to fix and fight this new type. Under the Versailles Treaty, Germany may build eight of these ships, and four are already projected. If, in the near future, therefore, a Naval Conference sets out to reduce the size and armament of battleships full consideration will have to be given to what can now be done even under the restrictions enforced on Germany under the Versailles Treaty.

In further reference to this question of the offensive, some recent German views on the influence of aircraft on future sea warfare are of interest. They are written by Commander Kuster, and appear in the *Militär Wochenblatt* for August, 1928. One interesting principle which he enunciates is that sea supremacy has become relative, as the victor at sea can still be attacked from the air. But the whole trend of his views is to show that the school of thought to which he belongs, which I believe is a very wide and extensive one on the Continent, anticipates the use of aircraft against merchant shipping in much the same way as submarines were used against it in the late war. I am certain that if we do not take full stock of that danger we are living in a fool's paradise.

Then there is that other principle—security. The lecturer showed us that sea security rested ultimately on a main covering force capable of engaging the most powerful ships of the enemy in a fleet action; in other words that the battleship in some form was still necessary as the fulcrum of sea power.

The rival claims of aircraft and battleships are often argued, as if one could be substituted for the other; but in fact they are complementary. The bomb and torpedo carried by the aeroplane represent an extension of the offensive in the fleet of the future, but the guns and armour of the battleship must continue to furnish the security behind that offensive.

ADMIRAL SIR H. KING HALL asked what was the armament and speed of the new German ships.

THE CHAIRMAN: Six 11-inch guns and 26 knots.

#### THE CHAIRMAN:

I am sure you will agree with me that Captain Creagh has given us a very interesting lecture containing plenty of food for thought. If I have any complaint to make it is that he has been too moderate in his views. He has not allowed his mind to go far enough. If we talk of the past we have got to be accurate, if we talk of the present, most people have to be a little discreet. But when we talk of the future we need not pay the least attention to anybody or anything. No one knows what is going to happen, and the more wild-cat the scheme that is put forward the better it is. Some people tell you that wild-cat schemes are very bad. A wild cat when you can tame it and make it of use is infinitely preferable to the tame cat that sits purring and contented by the fire.

I should like to have heard some more about seaplanes and submarines, bombs and other explosives, wireless and other things, not only in regard to the fleet as it exists to-day, but in regard to the way in which those weapons may be made of use in an improved form in the future.

I would ask you to bear in mind an expression used by a distinguished Flag Officer of the war,—one for which he was rather laughed at at the time. He spoke of the "synchronised blow." People said "Fancy talking of the synchronised

blow of a projectile that flies so many thousand feet a second, a torpedo which goes comparatively slowly, and a mine which is stationary." But there is much in what he said. "What we want to envisage is some method by which we can bring such a force against the enemy that it will confuse him and divert him from his purpose, so that we can then bring everything to bear against him."

I do not think that I can do better than advise you to consider the mind of that man who was at one time much misunderstood, but who without doubt did as much for this country as anyone of recent years: I need not say that I refer to Lord Haldane. Brains, breadth of vision, courage, application—all were there; and I would invite anybody who wishes to peer into the future to consider a mind like that and to apply the principles whereby he came to his conclusions to what they seek to do themselves.

We find ourselves to-day tied by all sorts of tricks of circumstances. It seems as if progress and civilization, far from making life more simple, have made it much more complicated, and the channels through which new ideas can permeate are long, tortuous and blocked by many official obstacles. The more complicated life becomes the more necessary it is to have a directive mind. Napoleon, in replying to one of his generals who had written to him, said: "Your letter is too clever. Cleverness is not required in war; what is wanted is directness of purpose." Napoleon's mother, a marvellously clever woman, said, not to him but to someone else: "Vague thought makes weak action; articulate your thought."

The usual votes of thanks to the Lecturer and Chairman were carried by acclamation.

## THE FUTURE OF MECHANIZATION<sup>1</sup>

BY CAPTAIN D. A. L. WADE, M.C., B.A., A.M.I.E.E.,  
Royal Corps of Signals.

**T**HE British Army has already made considerable progress along the path of mechanization, but under the restraint of financial stringency, and in view of the varied conditions under which it may have to operate, all such progress is and must be necessarily gradual. The future is consequently still obscure; so the object of the writer is to endeavour to penetrate that obscurity, and by deducing lessons from our past experiences to venture to indicate the direction along which the path of mechanization lies.

(1) *Lessons of the War, 1914-1918.*—The inability of infantry to advance in the face of machine-gun fire, and the impossibility of out-flanking movement, led to trench warfare on the Western Front early in 1915. To meet this situation the tank came to be introduced. Thus it was found practicable to open a path for the advance of the infantry. In other words, close-support weapons, the machine gun and light artillery, were enabled to keep pace with infantry, and thus render it a measure of assistance far in excess of that possible when they were stationary and behind the troops they were supporting.

Later on in the war, there came a second type of tank, the French "whippet," lighter and faster than its predecessor, and armed with a single light gun. Passing through the gap in the enemy trench system made by the heavier tank, it moved rapidly ahead and could thus attack the enemy's headquarters and lines of communication. Here, then, was a new form of cavalry, impervious to barbed wire and bullets, relying on its speed to evade hostile artillery.

(2) *Lessons of the Post-War Period to 1927.*—In this period we appear temporarily to have lost sight of the "whippet" or cavalry tank, and concentrated our efforts on the light Vickers tank (the present medium tank), essentially an infantry close-support weapon, but combining as far as possible the speed and lighter armour of the "whippet" with the fire power of the 1916 tank. Possessing an average cross-country speed

<sup>1</sup> The Author desires to make it clear that these pages were written before even the plan for the Army Exercises of 1929 were known to him.

of 10 to 15 miles per hour, and relying on its mobility to evade hostile artillery opposition, it must either utilize its speed, in which case it outstrips the slower moving infantry, or else adapt its speed to that of the infantry and thereby fall a victim to artillery fire. It follows, then, that either the speed must be reduced and the armour increased to withstand shell fire, or else the infantry themselves must be given the means of moving at 10 to 15 m.p.h. The latter can only be done by carrying them in vehicles, which must necessarily be bullet-proof and capable of cross-country movement.

(3) *Lessons of the Armoured Force, 1927-1928.*—With the creation of the Armoured Force built round the medium tank, the cavalry tank again appeared in the form of the Carden-Loyd or light tank as it is now termed. Working in co-operation with armoured cars and aeroplanes, this new vehicle carried out protection and reconnaissance duties covering the main body of medium tanks and tractor-drawn artillery. To it was usually allotted the self-propelled 18-pr. battery, the modern form of horse artillery. It was not intended that the Force should act otherwise than as an independent force. Its tasks were to be strategical protection, rearguard action, pursuit, or special missions, roles previously allotted to independent cavalry. It therefore contained no infantry; but, to afford close support of the main body, a special machine-gun battalion was organized and mounted in unarmoured cross-country cars.

The principal lessons learnt from this Force were as follows:—

- (a) Light tanks armed with a single machine gun are generally more suitable for protective duties than cavalry, but unable to carry out such detailed reconnaissance as can be done by the mounted man in close country;
- (b) Machine gunners carried in unarmoured cross-country vehicles are impotent to support medium tanks, since they must halt and dismount before coming into action. Thus their speed is reduced and they are unable to keep up with the attack. On the move they are vulnerable to small arms fire, and when in action their stationary vehicles are a target for artillery and aircraft;
- (c) Light guns carried in lorries and tractor-drawn field artillery are too slow in coming into action and in advancing to new positions, owing to the necessity of keeping their vehicles under cover, and some distance behind the guns, when they are in action.

In addition, important lessons were learnt in march discipline, both on the road and across country; in inter-communication between units, both on the move and with aircraft; also in bridging and supplies.

Generally speaking, it was shown that the handling and maintenance of such a Force is a practicable proposition.

(4) *Summary of above experiences.*—We can now attempt to deduce how far the new weapons may be utilized to co-operate with, or replace the older weapons :—

- (a) *Cavalry.*—Light tanks, thanks to their speed, radius of action and invulnerability to small arms fire, when assisted by armoured cars are better suited than cavalry to carry out reconnaissance, protection and pursuit, provided they are accompanied by a proportion of light cavalry to aid them in close country ;
- (b) *Artillery.*—To support an attack by medium tanks, the light and field artillery must be capable of moving forward in time with the attack, and firing direct from their vehicles (not necessarily when they are on the move). The vehicles themselves should be bullet-proof ;
- (c) *Machine-guns.*—To deal with enemy gun crews and ground troops a certain number of mobile machine-guns are also needed. A bullet-proof carrier on the lines of the Carden-Lloyd light tank would appear to be suitable ;
- (d) *Infantry.*—A force based on the medium tank is capable of carrying out all the operations performed by a normal force based on infantry, except the holding of a position gained in the face of an enemy, and protecting itself when halted. It is unable to hold a position because, unless on the move, its vehicles provide a target for artillery and bombing aircraft. It is unable to protect itself against surprise when halted, for there is nothing to prevent infantry creeping up at night and bombing its machines, or laying down mine fields around them.

It must be borne in mind that protective troops require to be withdrawn at night for the same reason as cavalry are to-day. To take the crews out of their vehicles and use them as outpost troops is impracticable because of the necessity for overhauling the machines after the day's march, and the physical strain imposed upon the personnel of all armoured fighting vehicles renders such a course undesirable. Secondly, their numbers are not sufficient to enable them to perform those duties efficiently. Lastly, they will not be available to man their vehicles for a counter-attack, should such be necessary.

If, then, we can provide troops to carry out the rôles of occupation and static protection, our force will be self-contained and endowed with the maximum of mobility and striking power.

(5) *The future rôle of infantry.*—In order to attack this problem with an open mind, we will, instead of the word infantry, employ the term "troops of occupation," which must be understood to include the holding of tactical positions and the local protection of the main force when halted—both defensive tasks. Let us then take the existing infantry battalion as our basis, reduce the equipment carried on the man to all but his gas-mask, water-bottle, and haversack, train him to manœuvre over longer distances at the double, and give him two wheels on which to drag his machine-gun. In short, let us make him as mobile as possible on his feet, but keep him off them till the last possible moment by providing him with a vehicle on the line of march, which in the attack may enable him to follow close behind the assaulting fighting vehicles, so that, before the enemy troops have had time to recover from the attack, he may dismount and occupy the position.

(6) *The troop carrier.*—To render such action possible these vehicles, which we will call "troop carriers," must embody the following characteristics :—

- (a) A cross-country performance equal to the medium tank ;
- (b) Engine and body bullet-proof ;
- (c) A low chassis to reduce the size of target offered by the vehicle and to permit of rapid dismounting by the crews ;
- (d) Capacity of accommodating two rifle sections, or a sub-section of two machine-guns—a total of eighteen men including the driver. One machine-gun per sub-section should be capable of firing from the vehicle, being mounted and fired from a front seat. By this means, it is suggested, a reasonably efficient covering fire could be provided whilst the troops are dismounting from their vehicles ;
- (e) Possess exits at each side of the vehicle to facilitate rapid dismounting.

Unfortunately no existing commercial vehicle is likely to be found combining these characteristics, or readily adaptable to them. Accordingly a special vehicle or vehicle and trailer should be designed and purchased. Although the cost of such would probably be considerable, it must be realized that our scheme will only entail the equipment of one battalion in each division of the Expeditionary Force with such transport. But it will be necessary to retain a small reserve of them to replace wastage during the opening stages of a campaign.

(7) *Organization and handling of the battalion (troops of occupation).*—The detailed organization of the "troops of occupation" needs no discussion since it can only be evolved after careful experiment spread over

a considerable period of time. It is merely suggested that they may be organized into brigades of three battalions, one brigade being normally included in the division, further brigades being held in reserve by corps and G.H.Q. for allotment to divisions as and when circumstances dictate.

For the transport of the three divisional brigades one troop carrier company and two motor bus companies R.A.S.C. will be allotted. For the reserve brigades no special transport will be allotted. Generally these latter brigades will be employed in defending corps H.Q., G.H.Q., rail-heads and advanced bases, but on occasions they will be required to carry out offensive operations in crossing rivers and in country unsuited to tank action.

To meet these various contingencies the battalion will consist of a headquarters wing, three rifle and one machine-gun company as at present.

If a satisfactory one-man light automatic rifle can be evolved, the rifle companies should be armed with this weapon. The anti-tank group of the headquarters wing would be abolished for the reasons stated below.

First-line transport would consist of 2-man armoured cross-country tractors fitted with trailers, say, two per rifle company and four per machine-gun company for the carriage of S.A.A., the remaining vehicles being light six-wheeled lorries.

(8) *Anti-tank defence.*—The abolition of the anti-tank group is open to serious criticism, but the writer, whilst fully realising the necessity for these weapons in infantry battalions under present conditions, is of opinion that, with the further development of tank power, the need will arise for a weapon capable of offensive as well as defensive action. Since this weapon will be required to carry out the dual rôle of covering a tank attack and supporting the "troops of occupation" in defence, it is best placed in the hands of the artillery.

(9) *Organization of the division (heavy).*—As previously stated, the main striking force will be based on the medium tank supported by motor-borne artillery and machine-guns, and closely followed in the attack by motorized "troops of occupation." Such a division would be developed somewhat on the following principles:—

(a) *The medium tank.*—The medium tank calls for no comment, though it is suggested, that future developments be in the direction of increased speed and armament rather than increased armour. Assuming the striking power of one medium tank battalion as roughly equivalent to that of the present infantry brigade, we will base our divisional organization on three medium tank battalions.

- (b) *Light tanks*.—For reconnaissance, a proportion of armoured cars and light tanks will be required ; the former for general reconnaissance on the divisional front, the latter to precede the medium tanks in an attack with the object of seeking out the enemy's strong points and dealing with his gun crews. We will therefore allot to the division one light tank battalion, consisting of one company of sixteen armoured cars, and three companies, each of sixteen light tanks armed with machine guns.
- (c) *Close-support artillery*.—For close support, light artillery combining the following characteristics will be needed :—
- (i) Ability to pierce the tank armour at 1,000 yards ;
  - (ii) Capacity to produce smoke ;
  - (iii) A low profile and chassis carrying one gunner and one driver, and capable of a cross-country performance equal to the medium tank ;
  - (iv) Easily dismounted from vehicles for use in the defence.

To meet these requirements two weapons are needed ; a low trajectory shoulder-fired gun of about 1 inch calibre, automatic and self-loading ; and a mortar of about 3 inches calibre and a range of 1,500 to 2,000 yards.

A suitable organization would be a brigade consisting of three batteries of eight guns and one battery of eight mortars. The extra personnel required to man the guns when dismounted would be carried in light six-wheeled lorries.

- (d) *Field Artillery*.—The existing organization appears adequate, provided the weapons are mounted on a full-tracked carrier. The present self-propelled mounting is both costly and bulky. It is suggested that an improvement in both these respects might be attained by the provision of a lighter chassis, fitted with hydraulically operated jacks to relieve the strain on the chassis when the gun is fired, following the practice of railway-mounted heavy artillery. The problem will be further simplified if a reduction in the weight of the guns themselves is found possible. Further details of the proposed divisional organization will be found in Appendix.

It will be noted that the baggage company disappears from the Divisional R.A.S.C., a petrol company being introduced in its place. The facilities for carrying greatcoats and baggage inherent in mechanized units renders a separate transport organization unnecessary, whilst the

problem of supplying petrol, oil and grease to a formation of this size justifies a petrol supply company.

(10) *The future of cavalry.*—It has already been stated, that a certain proportion of light cavalry will be needed to supplement the armoured cars and light tanks, when working in enclosed country. Since occasions may arise when they will not be needed owing to the nature of the terrain, there is no need to include them in the divisional organization; they should remain under corps control and allotted to divisions as and when required.

The question now arises as to whether the cavalry regiment working on, say, a divisional front requires to be armed with weapons capable of countering the armoured car or tank. To answer this question let us visualize the action of a cavalry regiment working with the advanced guard of a division in an approach march.

The advanced guard itself will be based on a medium tank battalion with a proportion of artillery and engineers. Spread out on the divisional front from 2—5 miles ahead of the vanguard will be the cavalry regiment and, probably, one company of light tanks, whilst further ahead will be the armoured car company and the machines of the A.C. Squadron R.A.F. Our advanced guard mounted troops will then consist of sixteen light tanks, sixteen armoured cars and a light cavalry regiment; in order that they may break through the enemy's covering troops and obtain information of his strength, or seize tactical positions, they must be armed with weapons capable of dealing with the enemy's cavalry, armoured cars and light tanks. They will therefore require a gun. Should this weapon form an integral part of the cavalry regiment or be a separate organization? The answer is that it should form a separate organization, because:—

- (a) A cavalry regiment covers a broad front, and the commander's hands will be fully occupied in controlling its action. It is undesirable to burden him with another weapon;
- (b) For administrative purposes it is undesirable to mix horses and A.F.V's in one unit;
- (c) In defence it may be desirable to detach these guns and absorb them into the main defence scheme; this points to their separate organization.

The conclusion seems to be that a proportion of light batteries R.A. be held under corps control and allotted to divisions for co-operation with the cavalry as required.

It remains to consider the carriage of cavalry machine-guns. It is sometimes advocated that machine-gun support for cavalry should be

provided by light tanks. But we already have light tanks co-operating with our cavalry. Surely what is needed for the cavalry machine-gun squadron is a form of transport which can move over country where the light tank is at a disadvantage; for example, in woods and in crossing shallow rivers, and the only known form of transport is the horse. Our machine-gun squadron should therefore revert to pack transport.

(11) *Independent cavalry.*—The future of cavalry working independently cannot here be considered. Undoubtedly the future will see the formation of light divisions, consisting possibly of light tank battalions, a light cavalry brigade, light artillery, and some form of self-propelled gun corresponding to the 13-pr., with ancillary troops. Such an organization can only be elaborated after extensive experiment in the co-operation of cavalry with light tanks and light artillery.

(12) *Medium and heavy artillery.*—Mechanization cannot diminish the need for medium and heavy artillery. Fortifications may necessitate heavy guns for their reduction. Moreover, roads and railways will remain the quickest of transport routes, and these can be attacked with greater accuracy by long range guns than by bombing from the air. Medium artillery will still be required in the forward areas. Owing to slower methods of fire and less frequent movement there can be little occasion to mount these weapons on tractors, so long as the requisite speed can be obtained with their present transport.

(13) *Problems peculiar to the British Army.*—The British Army is faced with two distinct tasks. Firstly, it must be prepared to operate in practically any part of the world; secondly, it must always be divided into two portions, the striking force at home and the garrison force overseas. No change in armament or organization can be considered without first inquiring how it may react on these two problems.

With regard to the first problem, it may be urged that a mechanized army will never be adapted to fight in hill-country or jungle. This is more or less true. But, on the other hand, it is highly improbable that, if called upon to fight in such countries, our opponents will be other than uncivilized tribes, ill equipped with modern armament. Against such an enemy the employment of large forces is never required, and the contemplated reduction of infantry need not materially affect the situation. As in the past, the problem of transport will have to be met by improvisation from local resources, e.g., camels, mules, porters, etc. Even so, there are nowadays but very few parts of the world, however wild, where wheeled transport has not made its appearance, and as time advances these regions will become still scarcer. The possibilities of armoured vehicles moving openly along tracks, under the eyes of an enemy powerless to resist them, must not be overlooked.

As regards the second problem, it seems inevitable that, sooner or later, the Cardwell system will have to be modified. Probably the best solution to the problem is that known as the "Group" system under which infantry regiments will be grouped territorially with one common depot. It will then be possible to retain, say, two battalions per group at home, while the remainder is serving abroad. As the proposed organization will necessitate an increase of tank units and a reduction of cavalry and infantry, it is suggested that the medium tank battalions be formed by gradually converting infantry battalions, retaining their regimental entity; whilst the conversion of cavalry to light tank battalions presents no more difficulties than their conversion to armoured car regiments.

The question of cost is undoubtedly serious. If mechanization means increased expenditure on the Army, then we may have to reduce the size of our forces, remembering always that modern weapons and efficient training may well count for more than numbers. And in this respect the small long service army possesses a great advantage over a conscripted army, based on a colour-service amounting to eighteen months or two years.

(14) *Summary.*—Arguing from our recent experience with armoured fighting vehicles, we derive the conclusion that a force based on medium tanks is capable of performing the functions of the present infantry division with greater mobility and striking power, provided it is accompanied by a proportion of motor-borne infantry to carry out tasks of occupation and static defence.

A method of carrying and organizing the infantry so that it may perform these tasks has been suggested. This may involve the abolition of the infantry anti-tank gun and its substitution by a motor-borne light gun under R.A. control. The gun to be detachable from its vehicle for use in defence. Further, our divisional cavalry of the future must be as light and mobile as possible. Its main duties will be to supplement light tanks and armoured cars in enclosed country. It should not be organized as a mixed unit, i.e., horses and A.F.Vs; but it will co-operate with light tanks and be supported by light artillery. The latter should not form an integral part of the cavalry regiment.

Tractor-drawn medium and heavy artillery will still be needed to attack roads and railheads and to reduce fortifications.

Lastly, it has been shown that the difficulties, arising out of a reconciliation of mechanization with our overseas commitments are more apparent than real.

## APPENDIX.

Proposed composition of a division for a first class war, to be known as a Heavy Division.

(A) 1 *Light Tank Battalion*, consisting of:—

Headquarters.

1 Company, 16 Armoured Cars.

3 Companies, each 16 light tanks.

(B) 3 *Medium Tank Battalions* (as to-day).(C) 1 *Brigade, Troops of Occupation*, consisting of:—

Brigade Headquarters.

3 Battalions (as to-day, less anti-tank group).

(All 1st L.T. mechanized.)

(D) 3 *Field Brigades R.A.* (as to-day).

(All guns tractor-borne.)

(E) 1 *Light Brigade R.A.*, consisting of:—

Brigade Headquarters.

3 Batteries of 8 guns (approx. 1").

1 Battery of 8 mortars (approx. 3").

(All guns tractor-borne but detachable.)

(F) 3 *Field Companies R.E.*(G) 1 *Field Park Company R.E.*(H) *Divisional Signals.*(I) *Divisional R.A.S.C.*, consisting of:—

Headquarters.

1 Troop Carrier Company.

1 Supply Company.

(36 carriers).

1 Ammunition Coy.

2 Bus Companies (each 25,

1 Petrol Company.

32-seater buses).

(J) 3 *Field Ambulances R.A.M.C.*(K) 1 *Sanitary Section R.A.M.C.*(L) 1 *Provost Company.*(M) 1 *Mobile Ordnance Workshop.*(N) 1 *Tank Salvage Company R.A.O.C.*

(All 1st L.T. mechanized throughout the division.)

## AIRCRAFT IN WAR IN TEN YEARS TIME<sup>1</sup>

BY LIEUTENANT-COMMANDER J. D. PRENTICE, R.N.

**M**ANY books have been written about the future of aircraft and there are, I suppose, few subjects upon which opinions differ more completely.

Colonel Fuller, for instance, draws pictures for us of armies sneezing themselves into impotence, or falling "into a mystic sleep"; of the entire personnel of battle fleets affected with such violent stomach-aches that they surrender unconditionally to single submarines; and of whole cities laughing themselves into insanity, while their governments weep melancholic tears as the enemy's ultimatum is signed. All these things, he suggests to us, may be brought about by aircraft and gas! It is only fair to add that he disarms our criticism by admitting that his pictures are exaggerations.

"Neon," on the other hand, in his "Great Delusion" classes all air warfare as freak warfare, and proves, to his own satisfaction, that aircraft never have had, and never will have, any decisive effect in war. In spite of clever arguments, however, he reminds one rather of the man who said of George Stephenson's first locomotive that "it was contrary to the law of God, because it would prevent cows grazing, hens laying, and would cause ladies to give premature birth to children at sight of these things going forward at the rate of four and a half miles per hour."

Between these two extremes are to be found writers of every shade of opinion. Each advances as proof of his theories instances of notable achievements or notable failures by aircraft, according to his prejudice in their favour or against them. We are told in one book that aircraft had little or no effect upon the war in Morocco, although the French used them lavishly and at great expense<sup>2</sup>; but the same book makes no mention of the efficiency of our air control in Iraq nor of the saving in expense which this has effected over older methods.<sup>3</sup> Other authorities ask us to believe that, because airships have crossed the Atlantic and because they can now carry aeroplanes, therefore America will soon be within striking distance of Europe by air.<sup>4</sup> Aeroplanes let down from these monsters are to "fight defending aircraft in their native air

<sup>1</sup> Written in 1928.

<sup>2</sup> "The Great Delusion," p. 207.

<sup>3</sup> "Air Facts and Problems," p. 77: "The expenditure involved is less than one-fifth."

<sup>4</sup> "Air Facts and Problems," p. 93: "The Reformation of War," p. 147.

or rain death and destruction from the skies." Yet no attempt is made to calculate how many aeroplanes or what weight of bombs an airship could carry across the Atlantic when already laden with sufficient fuel to bring her back again! Still, apart from such prophetic utterances, there seems little effort to forecast the immediate future in technical development of aircraft designed for war purposes. One reason for this omission may be that, to quote Mr. J. M. Spaight, "extreme differences of opinion prevail which relate not only to such indeterminate questions as the capacity of aircraft in the future, but to matters of (one would have thought) present and ascertainable fact."<sup>1</sup>

Yet, if we are to attempt to forecast the use to which aircraft may be put in a future war, we must first of all arrive at some reasonable estimate of what the capabilities of Service aircraft will be at that time. There has been steady development up to the present: will it continue?

Mr. F. Handley Page, speaking to the Aeronautical Society a short time ago, stated that there was scope for improvement under four headings, namely:—

- (1) Structural design;
- (2) Aerodynamical design;
- (3) Power unit and air screw;
- (4) Design from the users' point of view.

With regard to the last, he was particularly caustic about the present designs, saying that "the open cockpits, projecting gunrings and guns, pumps and other excrescences of the present fuselages add to resistance and tend to reduce all aircraft to one common level of inefficiency."

The methods by which improvements can be attained are too technical for me to go into, but I think it is fair to say that development is proceeding and that it will continue. The development of Service machines differs very considerably from that of commercial machines and of "record-breakers." Commercial machines are designed for money-making purposes; record-breakers to achieve some special result; but the factors which govern the utility of aircraft in war are many. Speed, rate of climb, ceiling, manoeuvrability, armament, blind spots, number of crew, all these affect the fighting value of aircraft, and the attainment of a high standard in any one of them re-acts upon the others and upon that factor, most important of all with regard to the strategical value of aircraft, radius of action.

Again, expert opinion is divided with regard to the relative value of these various factors, and it is extremely difficult to predict what line or lines development will follow or how rapid it will be. If, however, we study the progress which has been made in the past and assume that

<sup>1</sup> "Aircraft and Commerce in War," p. 28.

similar progress may continue to be made during the next ten years, we should arrive at some approximation of the capabilities of aircraft at the end of that period.

There are three main factors which govern the strategical use of aircraft. These are speed, radius of action, and armament or hitting power. It is with these three alone that I propose to deal. In order to arrive at some reasonable forecast of the capabilities of aircraft in 1938, I have adopted the graphical method and have plotted the speed and radius of action of the most distinctive types which have been in use since 1916.<sup>1</sup> This method is certainly not infallible and is, doubtless, open to criticism from both those who do and those who do not believe in the future of aircraft; nevertheless it is likely to form a better guide than some of the rather vague and wild assertions often made.

The first and most obvious thing which the graphs show is the rapid development which took place during the war and the comparatively slow rate of progress since 1918. This, of course, is partly due to the greater demand which the war set up, but also, I think, to the fact that, in peace time, far more trouble is taken to ensure that a machine is the right machine before it is produced in large numbers for Service use. The time taken from the commencement of the design of a new machine to the final delivery of the first development order is, in peace time, about three years. During this period it is subjected to severe tests and thus, though slower, development is surer than in war.

On examining the graphs, taking each type of machine separately, we see that:—

*Fighters* have consistently increased in speed while their endurance has remained the same or has slightly decreased. Hence their radius of action has increased in direct proportion to their speed. If development continues along the present lines, we should, by 1938, have a fighter with a speed of 207 m.p.h. and an endurance of about two hours at that speed, or a radius of action of just over 200 miles.

*Day Bombers*, during the war, followed the fighters very closely with regard to speed, while increasing much more rapidly in radius of action. Since 1918 they have split into two groups, one of which has continued to approach, if not to surpass, the fighters in speed, while the other has improved much more slowly in this respect.

It is when we come to examine the radius of action of these machines that we find the most difficulty in obtaining anything like a satisfactory answer from the graphs. Of the fast group the oldest and slowest machine, the Fairey III F, has the greatest radius of action. The

<sup>1</sup> See Diagram at end of this article.

machine which followed it, the Fox of 1927, fell away badly in this respect, but the new Fox which should be in service by 1930, has practically regained this lost ground, while carrying a heavier bomb load at a considerably higher speed. This last has been taken as the highest development of the type up to date and the line of the graph has therefore been drawn through this point. The positions on the graph of the three types of slow day bomber are so scattered with regard to radius of action that the line is, frankly, pure guess work; it is, however, drawn as fairly as possible between the three points and the result is, I think, not improbable.

These graphs give us for 1938 two types of day bombers; one with a speed of nearly 200 m.p.h., and a radius of action of 330 miles; the other with a speed of about 150 m.p.h. and a radius of action of 410 miles.

*Night Bombers* have developed along lines which are more easy to follow. From the time of their appearance with the Handley Page of 1917 their advance in both respects has been steady. By 1938 we should have night bombers with a speed of 130 m.p.h. and a radius of action of 480 miles.

I have not plotted a graph for the armament factor since this appears to be becoming fairly constant for the various types, namely:—

Fighters: Two guns.

Day Bombers: 460 lbs. of bombs and two guns.

Night Bombers: 1,008 lbs. of bombs and four or five guns.

The bomb loads are marked in brackets below each type of machine on the radius-of-action graph. Although there are one or two exceptions to the above loads, it will be noticed that the general tendency seems to be to standardize these armaments, and it does not seem likely that there will be very much change during the next ten years.

*Carrier-borne Aircraft* do not yet show sufficient signs of development along original lines for separate graphs to be plotted for them. They appear merely to lag about three years behind the machines in use in the R.A.F. Carriers are still using the Flycatcher, a machine produced in 1923, as their fighter, and, as a reconnaissance machine, are just getting the Fairey III F., which was in use in the R.A.F. in 1925.

So far as can be foreseen, both fighters and reconnaissance machines will develop in regard to their endurance more than their speed. Both the restricted space and the restricted time available in a carrier for landing purposes will tend to force them in this direction. We may expect to see a fighter with a speed of about 160 m.p.h. and an endurance of about three and half hours, and a reconnaissance machine with capabilities very similar to those of the slower type of day bomber.

*Flying Boats* have developed capabilities which very closely resemble those of the large night bombers. I think that we may safely forecast a similar efficiency for them in 1938; but one thing must be remembered: in calculating radius of action, endurance at full throttle has been taken in every case. The result, therefore, is obviously less than the endurance at cruising speed. If, however, adverse winds, war conditions, time taken in avoiding enemy aircraft, finding the objective, etc., be taken into consideration, I think that the results are fair for bombing machines. For reconnaissance purposes the radius of action of flying boats might well be increased by 100 miles.

*Airships* have at present little value for war purposes and I see no reason to believe that their value will increase during the next ten years. Their vulnerability will always prevent them from being used for offensive operations. They may possibly be used as refuelling ships for heavier-than-aircraft, and for the transport of stores and spare parts. But at the present rate of progress it is unlikely that many of them will be in the air by 1938, and their utility in these directions must remain small.

There is one purpose for which large numbers of small airships might be used in the next war. We are told that "the radius over which sound can be detected increases with the height of the apparatus"<sup>1</sup>; and, as in the last war "Blimps" were used very extensively for the detection of submarines, so in the next some similar type of small airship may be used to give warning of the approach of enemy aircraft.

#### SUMMARY OF DEVELOPMENT.

From all this it appears probable that in 1938 we shall have the following types of machine at our disposal for war purposes:—

##### Royal Air Force—

Type.	Speed m.p.h.	Radius of Action miles.	Armament.	
			guns.	bombs.
Fighter ..	207	215	2	—
Day Bombers .	198	330	2	460 lbs.
	148	410	2	460 lbs.
Night Bombers	133	480	4-5	1,008 lbs.
Flying Boats ..	133	480	4-5	1,008 lbs.
		(with bombs)		
		580		
		(reconnaissance)		

##### Fleet Air Arm—

Fighter .	160	280	2	—
Reconnaissance	155	400	2	460 lbs.
Torpedo B ..	150	230	1	—

<sup>1</sup> "Air Facts and Problems," p. 92.

*Airships—*

A small number of large ships.

A large number of small ships.

## THE USE OF AIRCRAFT IN WAR.

Having visualized the types of aircraft which we may expect to see in ten years' time, we may next examine the question of the uses to which they may then be put and of the effect which they will have in a future war. Here again, expert and other opinions range from "everything" to "nothing," and in this case there are no data wherewith to plot a graph.

The International Commission of Jurists, which met at the Hague in 1923, propounded the following rules for restricting aerial war :—

"Aerial bombardment for the purpose of terrorizing the civilian population, of destroying or damaging private property not of a military nature, or of injuring non-combatants, is prohibited."

"Aerial bombardment is legitimate only when directed at a military objective . . ."

"In cases where the objectives . . . are so situated that they cannot be bombarded without the indiscriminate bombardment of the civilian population, the aircraft must abstain from bombardment."

These proposals have never been ratified.

According to some people we may expect to see such international agreements obeyed in the spirit as well as in the letter. According to others all restrictions will be completely disregarded, and aircraft will be used to spread destruction amongst the civilian population with the object of breaking down their morale and compelling the enemy's government to sue for peace. The real answer will probably be found to lie somewhere between these two extremes, but, in any case, it must depend to a great extent on the nature of the war.

From the point of view of air action, wars may be divided into three categories :—

- (1) War between countries whose land frontiers adjoin ;
- (2) War between countries separated by a narrow strip of water ;
- (3) War between countries separated by large expanses of water.

Take the first case, and let us suppose that, facing each other, there are two armies, each of which is at least partly mechanized. Behind these armies are two air forces, each capable of striking to a depth of 500 miles into the heart of their enemy's country with large night bombers, to a depth of 400 miles with their comparatively slow day bombers, and to a depth of 330 miles with their fastest and most dangerous, bombing machines. For defence against bombing attack these air

forces will have fighters with a superiority in speed of 74 m.p.h. over the night bombers, of 59 m.p.h. over the slow day bombers, but of only 9 m.p.h. over the fast day bombers. In addition, they will probably have improved listening posts in the air, as well as on the ground, and anti-aircraft artillery which will surely be more efficient than in 1918.

In 1918, aircraft casualties sometimes amounted to at least 80 per cent. per month. In 1938 we may expect them to be, if anything, heavier. In 1918 this country alone was producing over 2,660 aeroplanes per month. To-day a new "development order" takes ten to twelve months to complete, and the large bombing machines take longer to build than the small fighters. It is improbable that any country can be in a position, at the commencement of a war, to produce machines at the rate of nearly three thousand per month; therefore it seems that the numbers of aircraft available for offensive purposes will tend to diminish during the first month or two of a war.

Now let us suppose that of these two imaginary countries whose frontiers adjoin, one, Red, concentrates its air attack against the civilian population of Blue, while the latter directs its whole military effort, air and ground, against the opposing army. The result of the war will now depend upon which first causes the greatest panic in the opposing country—Red's bombing attacks, or Blue's invasion, for presumably, the Blue army, with its entire air force assisting it, will be able to drive the Red troops before it.

The mobility of a mechanized army has been estimated at a hundred miles a day.<sup>1</sup> If then, the rival armies were entirely mechanized, it would only take five days for the Red aircraft to be driven out of range of the Blue civilian population. Even if the armies of 1938 have less than this degree of mobility, it is probable that, within a short space of time, Red would be forced to divert his air attack to the Blue army and its lines of communication. Bombing the civilian population alone would not stop the advance. In the meantime Blue would be striking further and further into the heart of Red country with his aircraft.

In the end a compromise in the use of aircraft would probably result; a compromise which would be extremely unpleasant for any civilians living in the neighbourhood of objects of military importance, such as munition factories, railways, etc., or in proximity to the actual fighting area. Nevertheless the civilian population would no longer be the direct target.

Whatever the outcome, there can be little doubt that the occupation of country is still the most effective method of suppressing its inhabitants.

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<sup>1</sup> "Army Quarterly," July, 1925, p. 277.

The man with a rifle and bayonet can kill you with moderate certainty if he is close to you and you are unarmed. The aeroplane overhead may miss you or may even be brought down by one of your own defensive measures. Even in Iraq we find police following up air operations and occupying villages which have no air defence.

In the second case, where the countries are divided by a narrow strip of water, we are faced with a very different problem.

To carry out an overseas invasion in these days of submarines and mines by means of mechanized armies with their mass of attendant paraphernalia, would be a lengthy operation, even supposing that it were possible. In this case I think war between two countries so situated might well become a struggle between air forces. But even so, it is hardly likely that the object of either side would be simply to destroy the civilian population. Modern life is so dependent upon mechanical aids that it is easier to disorganise it by destroying machinery than by killing people.

So far as our own country is concerned food supply is likely to be the most crucial problem. Even in ten years time the London Docks may be difficult to destroy from the air, but the radius of action of aircraft will have become considerably greater than the maximum distance which even one of our fastest liners can cover in the dark. In view of their high speed and large numbers, aircraft could search vast areas of water, while a 230 lb. bomb would easily sink an unarmed merchantman. Hence, if a continental enemy finds that his attacks against our country itself are proving fruitless or too costly, he may well turn to Germany's methods: declare a blockade and try to divert or sink every ship making for a Channel or East Coast port.

"By all probabilities of the case, it (the Air Arm) will be able to impose upon seaborne commerce, in the busiest traffic lanes, a degree of control exceeding anything yet experienced,"<sup>1</sup> and "who is going to be able to control the air for twenty-four hours a day out on the ocean and in the big three-dimension atmosphere?"<sup>2</sup>

The protection of our commerce with fighters whose radius of action is 200 miles and whose endurance is two hours will prove a difficult problem. If we adopt the convoy system the attacker will only have to concentrate his forces before delivering an attack. Even if we could provide a carrier to accompany each convoy, the enemy may well be able to bring sufficient aircraft to bear to smother the carrier in spite of her machines. This very serious problem may be most difficult to solve. Our hope of salvation lies firstly in the offensive striking power

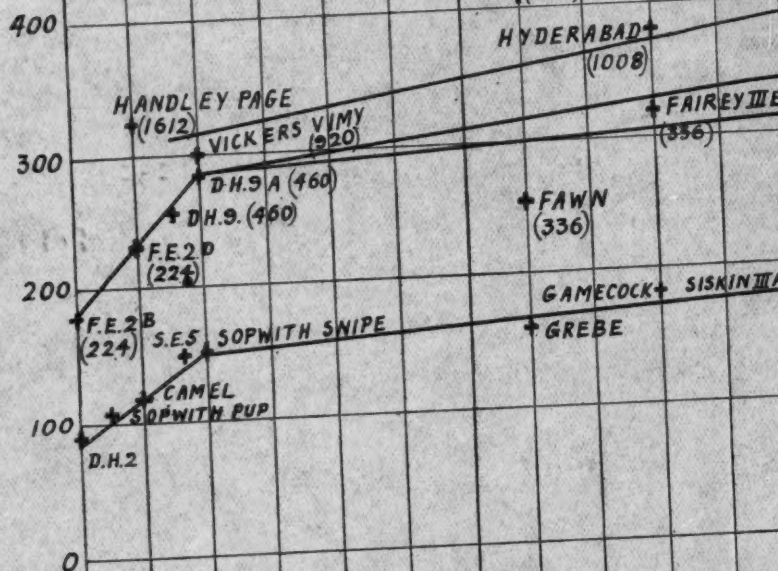
<sup>1</sup> J. M. Spaight, "Aircraft and Commerce in War," p. 18.

<sup>2</sup> "U.S. National Institute Proceedings, 1926," p. 1701.



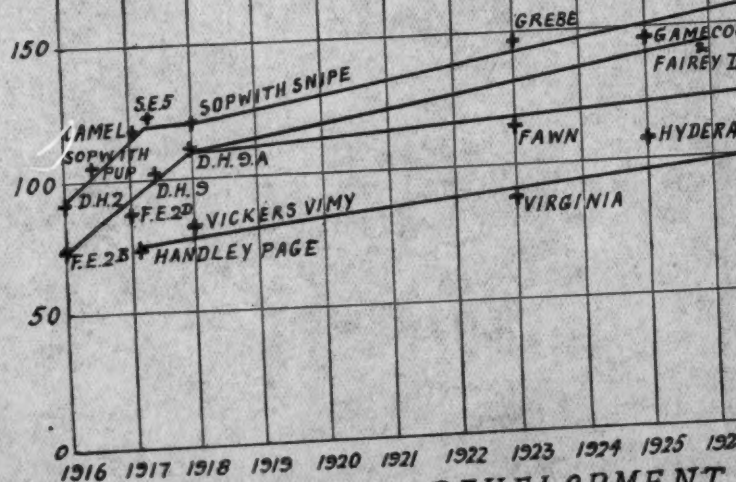
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# RADIUS OF ACTION

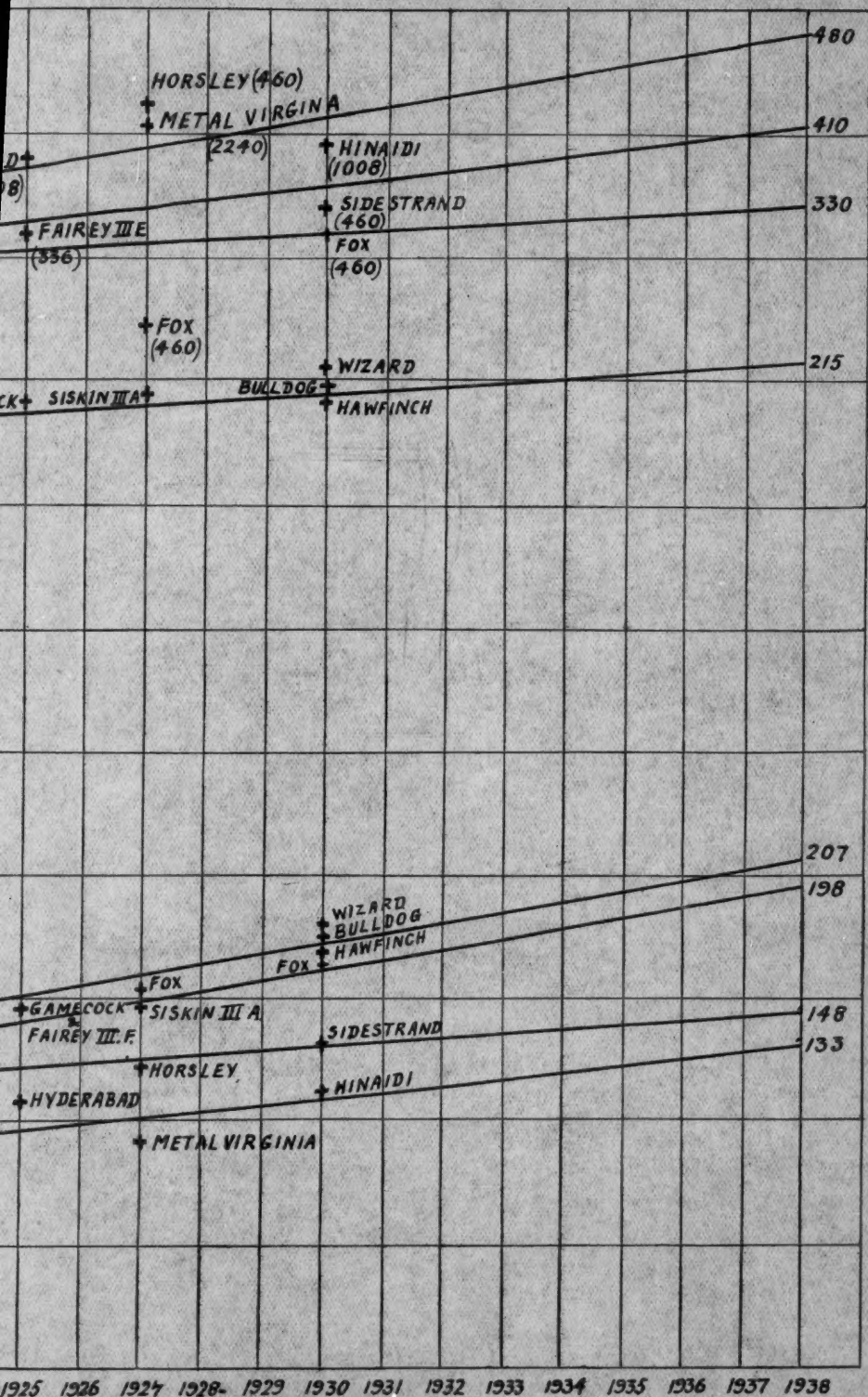


MPH

# SPEED



DEVELOPMENT



ENT OF SERVICE AIRCRAFT



of the R.A.F. bombing squadrons. We must trust these to sicken an enemy of war before we are sickened or starved.

The third type of war which may occur is that in which the countries are separated by large expanses of water. In this case the air will give the defender an even greater advantage than he has at present.

If we have arrived at a stage where all machines, except fighters, have a radius of action which is greater than the distance which a fleet can cover in the hours of darkness, the possibilities of approaching the enemy's coast without his obtaining accurate information of the fleet's movements will be very small.

With the improvement in efficiency, aircraft will have become indispensable to the fleet; yet the chances of carriers being able to operate or even to survive within range of enemy shore-based aircraft will have become correspondingly small. If a fleet is to operate overseas, therefore, it must first establish advanced aerodromes. With the increase in the size and speed of aircraft these aerodromes will have to be larger than those which would suffice to-day, and the stores which they will require will be more numerous and bulky. For the protection of these aerodromes military forces will be required. In fact, to maintain a fleet within five hundred miles of an enemy's coast will necessitate combined operations on a grand scale.

In short, it seems reasonable to conclude that in ten years' time aircraft will very materially affect the course of war; that only where the belligerents are within air-striking distance of each other, but separated by water, will aircraft be the most decisive factor in hostilities; and that whatever type of war this country may be engaged in, the Navy, the Army and the Royal Air Force will find themselves mutually dependent upon each other.

## PRINCIPLES OF WAR A CRITICISM

By ADMIRAL SIR H. W. RICHMOND, K.C.B.

IN the last number of the JOURNAL Admiral Usborne's Philosopher and Student had an interesting conversation on the subject of the "Principles of War."<sup>1</sup> Their conclusions invite some comments.

The Philosopher rightly suggests that in considering the questions involved we should go back to the beginning, and ask "what is war"? I suggest there is another essential preliminary step to take; and that is, what does he mean by the phrase "Principles of War"? Does he use this expression to describe the principles on which armed forces should be organized, developed and administered, or those upon which the operations of armed force should be directed and conducted? These are two totally distinct matters. The Philosopher includes among his principles the provision of means to win, but limits these means to weapons. This, I suggest, is hardly philosophical. If he includes the provision of weapons as one of his principles, he should also include the provision of the many other equally essential means of winning: good organization, adequate supplies, suitable and sufficient transport, and, as Dean Swift remarks, a full treasury or its modern equivalents. If he deals with preparation for war—and the provision of weapons is a part of preparation, not of conduct—he should surely also give place to the possession of patriotism, steadiness, and an understanding of the issues at stake among the people; for these, like weapons, are only to be produced by efforts made previous to a war.

I suggest, however, to Admiral Usborne's Philosopher that when we speak of "Principles of War" what we have in mind is those principles which should govern the *employment* of armed force. This, unquestionably, is the sense in which the expression has been used by all who have used it hitherto, for instance, Napoleon, Jomini, Foch, Henderson; and this is the sense in which it is commonly understood and interpreted. That

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<sup>1</sup> "The Principles of War": A Dialogue. By Rear-Admiral C. V. Usborne, C.M.G. August, 1929.

armed forces cannot fight unless their weapons are approximately as good as those of their opponents is true enough ; as it is equally true that they cannot fight without munitions, modern medical organization, or even boots—at any rate for long. But we do not say that the provision of boots is a principle of war ; the reason is that we are not thinking of administration and supply in this connection. The weapon question, being purely one of supply, falls outside the scope of these " Principles."

Supposing, however, that this interpretation is not accepted, and that the supply of weapons is one of that branch of principles we have in mind, I dissent altogether from the magnification which the Philosopher accords to superiority of weapons by making it " immeasurably the most important." The Student was particular to remark that he " confined the issue to modern wars between modern nations." Precisely what the word " modern " is intended to mean in this case I do not know. I assume it excludes medieval wars, or the wars between civilised and uncivilised Powers. But how far back modernity extends in the Philosopher's mind is uncertain, since Crecy is used as an illustration of the importance of weapons, so presumably we could take our *pièces justificatives* from any period back to the XIVth century, although it is not necessary to do so.

Between " modern " nations material discrepancies of an influential character do not arise in practice. Progress takes place at approximately the same rate throughout all the great nations ; none is ever markedly ahead of another for long. I cannot help feeling that the Philosopher shows some disregard for the scientific use of evidence when he allows himself to draw so sweeping a conclusion as " superiority of weapons is immeasurably the most important " from a range of examples so limited and so inappropriate as those he quotes. He and his interlocutor appear to accept as proof of this idea the undoubted fact that a modern cruiser could have destroyed all the fleets that fought at Trafalgar, and that two machine guns could have prevented the landing of William the Conqueror. But it never can occur that two " modern nations " are so situated that one can build modern cruisers while the other has not advanced beyond the three-decked sailing ship. To use such a statement as evidence appears to me unphilosophical in the extreme, more particularly when such insistence has been laid on the point that the argument is confined to modern wars between modern nations. The nation whose armaments are in the condition of the XIth or XVIIIth century can hardly be termed " modern."

The Philosopher considers that dissimilarity occurs as often as similarity in history. Evidence of such dissimilarity as has made weapon superiority " immeasurably the most important " factor in war

must therefore exist. Where is it? To what extent were the French victories in the age of Louis XIV or Napoleon, the crushing German victories in the wars of 1866 and 1870, the Turkish victories of Suleiman the Great, and the various victories at sea during the last three hundred years, due to weapon superiority? The French did indeed believe in 1870 that the weapon superiority they possessed in the *chassepot* against the needle gun would give them victory. It may have been a better weapon; but they were beaten. At Lissa the Italian fleet was a more powerful weapon, measured in units of ships and guns, than the Austrian; it did not win. In the wars at sea in the XVIIIth century, there was no more common complaint made by our officers than the superiority of the French ships: they were better sailers, stiffer in a breeze, and fought all three tiers of guns when ours could fight two only. If weapon superiority is immeasurably the most important factor, as the Philosopher supposes it to be, we should expect to find some proof of this in the shape of a succession of victories won by the fleets composed of superior instruments. But we do not. At the Yalu the Chinese had marked weapon superiority; yet they were beaten by the Japanese—but perhaps the Chinese are not included in the term “modern nation,” though it would seem as proper to draw conclusions from the war of 1894 as from those of 1066, 1346 or 1805.

I would suggest that, unless the Philosopher or the Student can furnish examples of modern war between modern nations in which the principal element of success has been superiority of weapons, it is not in accordance with the principles usually observed in scientific research to draw a conclusion that weapon superiority is immeasurably the most important factor in the decision.

The Philosopher and his friend also seem to me to give a very wrong interpretation to the doctrine, or principle, of Economy of Force. “Just enough force must be allocated to defence to resist the enemy’s attack.” There we have a purely defensive idea. An idea which may certainly with propriety be included among the examples and interpretation of the doctrine; but this is very different from saying that the doctrine is thus to be expressed. It omits too much. It is not merely the holding of defensive situations that constitutes the application. The doctrine applies also to the use of force in secondary theatres and in accessory needs. It relates also to the skill in operating in such a way that the number of tasks to be fulfilled shall be as few as possible.<sup>1</sup> Economy of force, moreover is not confined to numbers: it relates also to space and time. Clausewitz pointed out that “it is necessary to practice economy of force in space and time,” that is to say, we must

<sup>1</sup> See Colin’s “Transformations of War.”

employ as many troops as possible at the same point and at the same moment. The "time" element is all important, since it implies the simultaneous employment of force. As to numbers, what Napoleon called "the art of getting 180,000 men beaten by 140,000" is the antithesis of the doctrine, which, summed up most briefly is, I believe, the art of transforming inferior force into superior force, or magnifying existing material superiority. This is what great commanders have done. Nelson was making use of "economy of force" by the dispositions he made at the Nile and Trafalgar<sup>1</sup>; with inferior numerical and material force, he so disposed it that it became superior where it was wanted for long enough to create the result he desired. That was true economy of force, in its best interpretation. Suffren, possessing a superiority of twelve to nine ships, increased that superiority by massing the bulk against Hughes' rear, thus, as Captain Castex has remarked, putting into execution the doctrine of economy of force. Bonaparte's campaign in 1796, in which with inferior numbers he beat Colli and Beaulieu, is another beautiful illustration of the application of the doctrine. Yet another is von Kluck's saying that "subordinate commanders must have as their object success by efficiency against superior numbers." Efficiency is a form in which economy of force can be developed. The use of all such measures as containing action, diversions and feints is another application of economy of force—one of the most common and most valuable. Thus to limit the meaning of this expression to the purely defensive idea conveyed in the Philosopher's words is most gravely to misconceive it, and to mislead the learner. It is one of the most important elements in an active offensive.

I do not agree with the Philosopher when he remarks that "in order to win, the enemy must be reduced to such a state of fear that he sues for peace." I suggest to him that if he should put this opinion to the test of experience he will not find it proved, rather the reverse. Did the Americans win their war with Spain? If they did, is it a fact that the Spaniards sued for peace because they were reduced to a state of fear; or was it rather when the Americans had beaten the Spanish forces in Cuba, and the Spanish fleet, Spain realised that it was impossible for her to regain control of Cuba and re-establish her authority there? Were either the Turks or the Russians in their wars with Italy and Japan reduced to this state of fear which the Philosopher considers indispensable? I would suggest that peace resulted when Turkey and Russia realised that they could not eject the Italians and Japanese respectively from Cyrenaica and Korea. For my part I think Clausewitz,

<sup>1</sup> The Student says that Hawke had a numerically inferior force at Finisterre. Hawke had fifteen ships to the enemy's nine.

however old-fashioned he may seem to the modern student, is not far wrong when he says that "war is dominated by the practical object, and the value of the object determines the measure of the sacrifices by which it is to be purchased. As soon therefore, as the required outlay becomes so great that the practical object is no longer equal in value, the object must be given up and peace will result." The alternative might be added, that the object will also be given up when it is realised that it is unattainable—as it was realised by Maria Theresa, by Spain, by Turkey, and again by Russia when the risk of internal revolution in 1906 made it necessary to refrain from persisting in her attempt to acquire Korea.

The Philosopher again connotes suddenness with surprise. It is an element in surprise; it is not the whole of surprise. Surprise is not confined to a surprise operation or one of an unexpected character. Such a definition fails to include the introduction of a new weapon, which can hardly be included in the word "operation." The definition is too narrow.

The Student says that there is no war that he can think of where one operation has brought it to a close. What he means by "one operation" I am not sure; but I should be inclined to say that the Austerlitz Campaign, beginning on 2nd October and ending on 2nd December, would justly be called "one operation." This campaign, though it included the series of battles from Memingen to Ulm, could, I think, be properly described as one operation, that is to say the operation of the capture of Vienna. The "Six Weeks War" of 1866 and the war of 1870 seem equally capable of being described as one operation. I observe that Captain Liddell Hart in his new book<sup>1</sup> finds twenty-seven instances of campaigns in which a decision was obtained by a "direct strategic approach to the main army of the enemy."

Nor do I feel at all inclined to agree with the Philosopher when he says that what is called the "principle of security" is included in the expression "just enough strength must be allocated to defence to resist the enemy's attack." The manner in which force is applied may furnish security without the allocation of forces for defence. The fact of throwing the enemy upon the defensive may of itself provide security; for example—and there are many—de Bussy, in a memorandum suggesting an attack upon India from Mauritius, proposed to denude Mauritius of practically all the garrison because "the appearance of your Majesty's forces in India will certainly not allow the English to make any attempt upon that country." The Philosopher appears to me to mistake one of the *means* by which security can be attained, namely the allocation

<sup>1</sup> "The Decisive Wars of History."

of defensive forces, with the principle itself. This principle, I suggest, is that measures are required to guard against any form of counterstroke which the enemy may employ to prevent the attainment of our object. For instance, the counterstroke of subversive propaganda, in which Security Services were employed in the late war, does not come within the scope of any of the Philosopher's definitions.

When the Philosopher reaches his VIth Principle, he again invites comment. He says that "the belligerent must choose as his object the infliction of the greatest degree of injury within his power to encompass in a single operation." How does this definition meet the test of actual experience in successful war? In the war with France in 1756 was this the object selected? In the Spanish-American War did the United States set out to inflict the greatest injury they could on their enemy? Did Frederick the Great in the first Silesian War aim at inflicting the greatest injury to Austria? In the Seven Years' War he never attempted, because he was not strong enough, to overthrow Maria Theresa. What he did was to resist attacks until the Queen was persuaded that it was impossible for her to conquer him and regain the territory he had stolen. She then made peace.

It may certainly be that the object for which a war is fought is to be attained by the infliction of the utmost injury upon the enemy in the scope of one operation; but this is not the only way, nor is it necessarily the best way. The Philosopher appears to be mistaking the measures for the principle, just as he mistook one form in which economy of force can be exercised for the principle of economy itself, and one measure by which security may be attained for the principle of security.

The Philosopher defines the principle of mobility in terms which associate mobility solely in terms of surprise. "To have mobility superior to the enemy's gives power to deal with the unexpected and to inflict it." But that is merely an assertion of one of the advantages which mobility is capable of conferring. Why in a definition of a term confine the term to a single example of the application of its use? Mobility is the power to move. The principle of mobility seems rather to be that the conduct of operations requires the possession at all times and the use of movement. A force which possesses mobility has advantages by no means confined to surprising the enemy or of meeting an unexpected situation; nor indeed for those purposes need the mobility be superior to that of the enemy, though greater mobility is an advantage, in certain circumstances. Small local forces can be stationed in garrisons if, by the possession of mobility, reinforcements can reach them in time. The construction of roads in Ceylon in the middle of the XIXth century, by giving mobility to the troops, increased their

effectiveness and abolished the need of forts. We held Gibraltar through a long siege because the fleet never lost its mobility. Rodney, Howe and Darby were able at intervals to relieve it. If the conduct of operations had been such that the fleet had been shut up, and therefore immobile, Gibraltar must have fallen. The Roman roads conferred mobility on the Roman forces, because they enabled the Roman soldier to carry great weights on his back, making him less dependent on transport; and this fact gave mobility to the Roman armies. These, however, are obviously only a few out of the many applications of the principle of mobility to military operations: and of these many, surprise is one. It is, however, wholly improper to attempt to define a principle by citing one of its possible applications as the Philosopher has done in this case of mobility, just as he did in others.

## THE COMMANDER AND HIS OFFICERS

By CAPTAIN L. H. B. BEVAN, R.N.

**W**HEN we look back in history, we may notice one definite change which has taken place in the relations of the Commander with his subordinate officers. In former days when social organizations were much more simple than now, and when class differences were therefore more distinct, the commander of any unit stood so much above his subordinates that his rule was, perforce, an autocratic one. Appointed to his command from outside, as he normally was, he was a man of superior caste and of different origin from those under him. He might be a man of education and high moral standards, but his relations with his subordinates were governed by what was expedient for the advancement of his object, or of his own position, with little consideration for their feelings or well-being.

Nowadays, however, the general standard of living and education has improved; officers rise to command from the junior ranks of their Service, and the commander is no longer a man of widely-different class from his subordinates, but of much the same origin and upbringing. His position is not so simply autocratic; his actions and his motives are under the observation of men of the same intelligence as his own. The discipline which is to govern them must, therefore, be of the kind which is dependent on a mutual respect for each other.

If we seek for the ideal form of this relationship, we must admit that it can only be possible between two persons themselves of ideal character and behaviour. Without asking for such perfection, it will, however, be generally agreed that, since it must depend upon a mutual understanding and respect, the ideal relationship *does* require high standards and pure motives on both sides.

Man's duty has been defined in a Greek phrase meaning:—"Be True: Do Good." If "Be True" means "Be loyal to your fellows," and "Do Good" means "Work for the good of the Service," or, as Lord Fisher put it, "All for the Service," that motto would seem to comprehend everything that the commander could expect of his subordinates, or a subordinate look for in his commander. It is upon the mutual trust and respect to which such a generous understanding of one another will give rise that the discipline of officers must be based.

Now, although the attainment of the ideal relationship will depend equally upon the commander and the subordinate officer, the responsibility for initiating it must rest with the commander himself. As Paul Jones says: "Every commander should keep constantly before him the great truth that to be well obeyed he must be perfectly esteemed." His motives must be above suspicion, and he it is who must first show his loyalty and readiness to trust his subordinates. And then, although the tradition of the Service and ingrained discipline will have ensured their loyal behaviour from the beginning, he may look for that whole-hearted reciprocated confidence which will produce the ideal, easy relationship upon which the perfect working of his command will depend.

In the Naval Officers' Manual of 1848, Captain Glascock writes of this: "It is not sufficient for a man who is vested with command, as it may be for a private person, to be himself satisfied that his actions are right.

"A captain's reasons for acting should generally be made known and explained in public, that it may appear clearly that he is acting by no other motives than the prosecution of the service he is employed upon, for the welfare of the people he commands . . ."

"Promulgation of purpose, or explanation of motive are by some officers held to be inconsistent with the dignity due to command, inasmuch as they imagine the means adopted to be little short of a desire to court popular favour at a servile price." Such a reproach, however, can hardly be levelled at any man who shows by his actions an unselfish devotion to the good of the Service.

To the young officer, an understanding of what is meant by the good of the Service is embodied in the training that all now-a-days receive when they enter it as very young men, and in the tradition that they find there. The fact that that training is received very early in life, so that it is impressed on the virgin soil of their minds, and the fact that all alike are taught it, are important factors in this common bond of understanding. It is also, however, a fact which seniors must remember that young officers often feel the need to conceal earnestness or devotion to duty from their fellows. "These young men," says M. Maurois, "are above everything anxious to avoid emphasis in the expression of their feelings. In their horror of appearing high-brow, many of them adopt an air of levity. But underneath this veil of nonchalance, you are conscious of hidden force." If this is true of the Frenchmen of whom M. Maurois is writing, one would certainly expect it to be so of the more reserved Briton. But in practice, one very seldom finds cause to doubt that to work for the good of the Service is a motive universally accepted and appreciated by every officer.

If this mutual understanding of motive exists, it should lead to a mutual confidence that will remove all cause of real friction between a commander and his subordinate officers, for the reason that the subordinate will feel assured that any failure on his part to execute his duty as it should be executed, though it may receive the rebuke of his commander, will not mean the forfeit of his personal esteem. And the commander will know that his officer, though he may have merited a rebuke, can have his error pointed out without being left with any feeling of inferiority or bitterness.

In the well-known book, "Letters of a General to his Son on obtaining his Commission," this point is well-illustrated by the story of the Company Commander who sends for his young subaltern to dress him down for some neglect of duty, and ten minutes later in the mess calls him by his nick-name and fixes up a game of golf.

Since, however, in discussing this relationship we are not dealing with ideal persons, it is necessary to go a step farther and to remember that in the heat of a moment, a rebuke may be given undeservedly and received without complete understanding. Then it is that a proper *easy* relationship between the two officers will allow, and indeed, expect, that before the incident has been forgotten the subject will be re-opened and, in a candid talk, an explanation on one or both sides will clear the matter up.

This may undoubtedly require moral courage on both sides, but it is in such things that a commander can, by his understanding attitude to his subordinates, foster the moral courage that will sustain them in mental crises and that will make them depend on a truthful attitude at all times. The commander, too, should admit that he is wrong after he has found out that he is wrong. "It is a false and pernicious doctrine," says Colonel Miller, "which holds that admission of error by a leader destroys the confidence of his subordinates."

We read that that great disciplinarian, Lord St. Vincent, who certainly ruled his flag officers and captains as strictly as anyone else in his fleet, did not hesitate to apologise to Sir John Orde upon his own quarter-deck for a rebuke which he had made in error, and at a time, too, when there was already friction between them over Nelson's appointment to command the detached squadron.

We come now to loyalty. To be true to your fellow-men, that is the particular aspect of loyalty with which we are concerned. And it is the cement of the whole fabric of any Service. In it, of all things, the commander must be careful to set the example.

There are, perhaps, two other loyalties which in the past have been liable to override loyalty to an officer's commander; loyalty to his

conscience and loyalty to his political convictions. The two were, of course, not infrequently closely connected. In these days of liberal religious views and toleration of the opinions of other men, it is difficult to conceive of loyalty to one's commander being influenced by objections of religious conscience, but it must always be remembered that a man's religious conscience is likely to prove the strongest of all his loyalties.

Political convictions or political influence in our Navy play, one would say, a very small part at the present day, and are perhaps so little thought of that one is almost astonished to read of their disruptive effect in the old wars and to realize that they still exist, as we have heard, in the navies of other nations, and that it was not so very long ago that their influence was actually a very serious question in our own Service.

A commander loyal to his subordinate supports him with his full authority whenever he is carrying out his orders or duties delegated by him. He continues to back him whatever ill consequences may arise, and he is ready to accept the full responsibility of those ill consequences, even should they have been caused by failure on the part of his subordinate, though this should not be allowed to interfere with such explanation as is demanded by the commander's loyalty to his own superior, who must, in his turn, respect such reticences as the commander desires to make. In other words, the commander will not discuss a subordinate's failings or his personal relationship with him with anyone who is not in the proper Service channel between them, until he has made it clear that the continuance of his failings, or the magnitude of them, requires such action. Until such moment arrives, it will be clearly understood that the commander himself accepts responsibility for any shortcomings.

He must show always as careful consideration for his subordinate's position as for his own.

On board ship it must often happen that a commander's censure on a subordinate officer must be in public and before inferiors; that cannot be avoided, but it will always be possible for the censure to be made in such words and in such manner as will be no derogation of the subordinate's rank and position.

Loyalty of a subordinate to his superior should be an ingrained quality, and in a Service with tradition, it undoubtedly is; but with the liberal interpretation of discipline which education and development of initiative requires, it becomes more and more important that the subordinate should never forget the loyalty which requires him always to uphold his commander's position.

No one would wish to say that subordinate officers should never criticise orders, but orders directly given by a commander to his subordinate officer should not be discussed or criticised with anyone except that officer's superior in the Service channel between them.

When St. Vincent said: "Discipline begins in the ward-room. I dread not the seamen; it is the indiscreet conversations of the officers and their presumptuous discussion of the orders they receive that produce all our ill," his mind was, no doubt, occupied with the anxiety of the mutinies of that time.

Discussion amongst juniors of actions and plans emanating from superior officers may be useful and far from harmful, but it still remains a fact that unguarded conversation may easily become disrespectful and disloyal to the commander or other authority, and dangerously subversive of discipline.

This is not merely a suppositious danger, but one which must always exist where free discussion is encouraged; it is often not realized by officers that their conversations are overheard by persons who are likely to misinterpret the words in which their criticisms are conveyed. Senior officers in officers' messes, and elsewhere, must be prepared to remind officers of this, if their words are open to an interpretation of disloyalty or insubordination.

A subordinate must be ready to sink his own opinions and wishes to further the directions of his commander.

A writer says: "If we carefully examine ourselves, we shall find too often a tendency to examine the orders of our superiors. If they agree with our own ideas, we are intensely loyal; if they do not, we take them with bad grace."

"In other words, our loyalty rings true only when the plan or orders we are required to follow agrees with our own ideas. It is a poor and unreliable subordinate who can be depended upon to carry out energetically only those plans of which he himself approves."

"Once a decision has been laid down, it is true loyalty to give up our own ideas and attempt, with our whole might, to carry out the plan which it is our duty to follow."

Furthermore, if in doing so the subordinate is convinced that he is executing a mistake which he has pointed out, he must act not blindly, but with an intelligent readiness to prevent or mitigate the bad consequences of such action, should circumstances prove his opinion to have been right.

Foch takes us even further than that. He says: "To be disciplined does not mean that one only carries out an order received to such a

point as appears to be convenient or possible. It means that one frankly adopts the thoughts and vision of the superior in command, and that one uses all humanly practicable means in order to give him satisfaction."

This loyalty has, perhaps, a peculiar significance when one considers the relations between a high commander and his staff officers. It is here, above all, that the subordinates must be ready to adopt the thoughts and vision of their chief.

In some notes issued to his staff in the late war an Admiral defined the general duties of staff officers to be "to help their Chief." He does not delegate his duties to any member of his staff, but he asks them to *help* him by making those duties as light for him as possible. Their responsibility is only to him. Initiative is encouraged, but officers are reminded that staffs are not ready made but have to be moulded into a team and they are enjoined to consult their chief on every detail at the beginning of their association, in order that they may know well his views and wishes, so as to be able to be a real assistance or to act for him when necessity arises.

The Admiral must be kept fully informed. It is no help to him to do his work for him without telling him what is being done. His personal decision must be obtained before important action is taken, if it is humanly possible to do so in time. Loyalty between Admiral and staff is essential if the flagship is to be regarded as successful in the eyes of the fleet. The fleet must be aware of no staff, but merely of one personality, and that a human one, to which the staff officers must completely have attuned themselves.

It is not easy. It is not even easy, as everyone who has been on a staff understands, for a staff to avoid the well-known pitfall of speaking of "What *we* think, or want" instead of "What the Admiral thinks, or wants."

From the particular aspects of this relationship that have been touched on, it might appear that the chief characteristic required in an officer is amiability, and that no account has been taken of the strong and forceful character that we may expect to be a sign of a great commander. This is not so really. A strong personality obtains the respect and confidence of his subordinates far more easily than a weaker one; but to allow the easy relationship which will give the highest results, it is undoubtedly necessary for such a character to show not only power of will, but power of self-restraint—to suffer weaker men gladly, though they may seem fools.

An overbearing character can very quickly stifle moral courage in his subordinates and thereby deprive himself of the truthful advisers

which even the greatest men cannot entirely do without, a fact which becomes ever more true with the increasing complication of war.

A commander, on the other hand, must be prepared to guide rather than suppress the strong personality or individuality of a subordinate, allowing it full scope and freedom in the organization of his officers, and to adapt it to the good of the Service. One feels very strongly how necessary it is for full consideration to be given to the officer, who, while yet in a subordinate post, has all the marks of the coming leader. Conscious of his own knowledge and ability, and fired with zeal, he cannot fail to feel impatient if mistakes are made or opportunities lost through the errors of his commander. He has to remember his commander's position and to be loyal, using his genius to improve and perfect his commander's methods and plans rather than to attempt to force his own against his superior's wishes.

Kuropatkin wrote in 1904 of the old Russian Army: "Men of strong individuality are, with us, unfortunately, often passed over instead of receiving accelerated promotion. Because they are a source of anxiety to some officers in peace time, they get suppressed as being headstrong. The result is that they leave the Service, whilst others who possess neither force of character nor conviction, but who are subservient and always ready to agree with their superiors, are promoted." Could this be said of our Service at the present time? It is only possible to discuss such a question in a completely detached way, but it must undoubtedly always be a grave danger when considerable reductions in the lists have to be carried out. It is necessary, perhaps, to realize that in an era of peace, where effort is concentrated on experiment and training, there is less room for the man whose chief attributes are fighting courage and dash than for the planner and administrator; but, on the other hand, the influence of forceful characters is invaluable at all times in a fighting Service, and if only those are to be left who conform to the conventional standards of measurement, we may one day find ourselves without the big man who, though his reputation may to some extent depend on a peculiarity of character, has a name amongst men which will command the confidence of the nation and the fleet.

The extent to which a close personal and easy relationship between two persons can be developed must, of course, be affected in practice by whatever there is of sympathy or antipathy between their two natures. The inspiring effect of even the slightest personal interest shown in a rigid organization like a fighting Service is well-known to everyone. How often is it not the case that the greatest and certainly the most beloved and loyally followed leaders have been men who had the gift, or have cultivated the power of remembering names and faces,

and who, by making use of frequent words of recognition, were constantly increasing the number of their devoted followers?

To attract and hold any sort of personal devotion, a commander must be ready to give recognition and praise. There is no one who is not the better for it. The most efficient and brilliant men are often the most consciously deserving. It is well-known how anxiously Nelson looked for recognition of his deeds, but it is also true that he did not forget to give praise to whom he owed it. After the action of the "Agamemnon" with the "Ca Ira," he reported to his Commander-in-chief: "If the conduct of the 'Agamemnon' was by any means the cause of our success, Lieutenant Andrews has a principal share in the merit, for a more proper opinion was never given by any officer than the one he gave me in a situation of great difficulty."

In the ordinary details of routine work, praise bestowed at the right time and in the right words has a stimulating effect on subordinates, though lavish praise loses its value, just as frequent or harsh blame fails in its purpose and leads to indifference. It is a fact, I believe, that many do not find it easy to praise; perhaps it is the difficulty of finding the right words or the fear of making praise too cheap, but subordinates are apt to be left with the chilly comfort that "at any rate, he could find nothing wrong." An error on the side of over praise is perhaps better, for even if not fully deserved, the recipient will think it is, and his efforts will be stimulated.

When the two natures are definitely antipathetic, the discipline of the subordinate and the self-restraint of the senior will be exercised to prevent any discord; yet the resulting relationship can never be the best. As is well understood, this question of antipathy has to be closely studied in the case of the more highly-placed posts.

We have to realize that between such officers, who have similar and very great responsibilities, like the commander of a fleet and his second-in-command, the success or otherwise of this relationship is much more touchy, even, than in other ranks; all the more so, perhaps, because of its great and conspicuous importance.

Hood's biographer, in speaking of his relationship with Rodney, said: "It may be well said that there was nothing beyond a natural incompatibility of disposition, exasperated by the relation in which they stood to one another. It is never, according to the cynical saying of lawyers, necessary to seek a motive for murder in the case of husband and wife. Hatred is too commonly the alternative to the proper relation."

"The First and Second-in-Command are on a footing with one another which makes hatred very natural where the superior in rank has not also superiority of faculty or the power of attracting affection."

However, there must be in both the unwritten, as well as the written, history of the Services, very many cases where tact and effort on both sides has maintained a loyal and successful relationship through the hardest and most difficult times, or, perhaps, what is more, through the most dull and boring times.

It is pleasant, for example, to read of the relations between Sir John Jervis and Sir Charles Grey, the Military Commander in the combined operations against the French West Indies.

On no occasion for a single moment was there the slightest misunderstanding between the two Commanders-in-Chief. "Neither of us," said Jervis, "wrote a letter on service to the other during the whole campaign."

One of the principal relations between a commander and his subordinate in practice must be that of instructor and pupil. The young officer receives instruction from the example of his superiors, but the more direct form of teaching is by giving him responsible duties.

Jervis, we are told, was lenient to young officers who failed through lack of experience, for he would forgive one for losing or springing a topmast in carrying sail, but he would never overlook splitting a topsail in handling or reefing it because, he said, that such accidents were the effects of ignorance or carelessness. When this principle is carried to important duties, it has to be recognized that it requires distinct effort of mind on the part of the senior officer who, in allowing a younger officer responsibility, does not and cannot delegate his own.

As the commander must permit his subordinates to exercise responsibility, so he must allow him scope for his initiative. The exercise of initiative by junior officers is forced upon them by giving them responsibility. They initiate action in accordance with the rules they have been taught of seamanship and other technical sciences. Later on, situations are met which are not covered by rules, and perhaps progress can only be made through mistakes. But, whatever happens, the commander has to do all he can never to crab any scheme of his subordinate, or to repudiate it if it fails.

How many of us, as young officers, have realized the self-restraint of our Captains who, whilst fully aware of what was going on, remained out of sight or forbore to interfere whilst we achieved a recovery, lame or otherwise, from a mess for which we were responsible.

In larger questions of responsibility and initiative it becomes necessary to decide to what extent initiative of subordinates can be developed and exercised without sacrificing loyalty and obedience. Nelson's example, in this respect, will forever be the highest conception of this principle.

In Mahan's words: "Upon his subordinates Nelson laid a distinct charge that he should expect them to use their judgment and act upon it with independence, sure of the generous construction and support of their action."

" 'We must all, in our several states,' he says to one of his subordinates, 'exert ourselves to the utmost and not be nonsensical in saying: 'I have an order for this or that,' if the King's Service clearly shows what ought to be done. I am well convinced of your zeal.' "

In advanced positions of responsibility, commanding officers or staff officers can only take the initiative with sureness if, in addition to sound professional knowledge, they are fully possessed of their commander's wishes and intentions. That they are in such position is primarily the responsibility of the commander himself.

"Nelson," says a writer, "discussed his principles, methods and plans with his Captains so frequently that all were thoroughly acquainted with them. They were a team trained to work together with a perfect loyalty to their leader. There was, consequently, no possible ground for criticism, except that which had previously been invited or fully considered. It is, therefore, easy to understand how successfully his Captains could fight without his personal guidance. The completeness of his victory of the Nile was the result of dispositions due to the initiative of his Captains, the dispositions that they made without hesitation before his flagship arrived on the battlefield."

It is, generally, only after a war has been in progress for some time that a commander finds such a clear task to prepare for as had Nelson when he was sent by Jervis to search for the French fleet before the Nile. The greatest danger of failures occurring through lack of initiative in subordinate commanders has generally existed at the beginning of a war before the units of the fleet have been trained in the intentions of the commander, or perhaps before the commander has been found who has the power to make his intentions clear and inspiring.

The danger is well-known, but it must always be a puzzle how to foster the right spirit in the artificial exercises of peace time. It does not seem too much to say, however, that half this difficulty will be solved in a fleet in which the subordinate commanders have a close knowledge of their chief, acquired from a personal acquaintance and friendship.

In these days of complicated technique requiring a large organization and many instructions to interpret it, the point of contact between the Commander-in-Chief and his subordinates has a tendency to shift to the staff officers and the medium of print. There is little to inspire

a man with the spirit of his leader in a printed order which may not even embody the characteristic phraseology of the commander himself, but be drafted by a staff officer in a stereotyped form. Most officers can bear witness of how difficult it is to read such orders with such full understanding of all their intentions that the spirit of the order emerges from the details. Guiding instructions must, of course, be used, but how much more important with every added complication has become the frequent personal talk, personal discussion and personal explanation by the commander, who is to control the team for which these instructions are to be the rules.

We are told of the extreme pains Nelson took to impose on his Flag Officers and Captains the *spirit* of the enterprises which he proposed to undertake. Is the vital importance of this personal interpretation of instructions by the commander fully appreciated in these modern scientific days?

Nelson, again, is an example almost sublime of an inspiring leader, and we have this picture of the effect of his personality on his fleet. "It was not so much," we are told, "by formal precept as by the unconscious influence of his example that Nelson influenced those under him. What he *said* was repeated, and how he *looked* was described from lip to lip throughout every ship in his squadron. The worst thing his men feared was his disapproval. As the 'Amazon,' obeying Parker's signal, drew out of her desperate duel with the Trekroner forts at Copenhagen, her Captain's words, just before he fell, were: 'What will Nelson think of us?'"

A commander of this type is not *necessarily* rare. Such a man should be the logical and ultimate development of the relationship which we have been discussing. But there is at least a danger that our scientific training may make us careless of that added fighting power that a real leader can give his force. The efforts of subordinate commanders, many of whom may be experiencing the rush and confusion of battle for the first time, will be united and co-ordinated by inspiring leadership in a way they can never be where each is relying solely on what he can recollect of printed memoranda.

Over and above all his thousand and one orders and instructions, therefore, and perhaps with more effort than ever his great forerunners had to make, the modern commander must strive to establish throughout his fleet his living personal touch.

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## PANIC IN WAR

BY BRIGADIER-GENERAL H. ROWAN-ROBINSON, C.M.G., D.S.O.

IN September, 1928, a discussion on the subject of "Panic" was initiated in the German *Militär-Wochenblatt* by General von Altmann, the editor of that journal. The General's view was that the Great War is now so far distant that the time has come to speak freely on subjects, which for various reasons have for ten years been kept under lock and key, yet possess a capital importance for future generations. Among them one of the most pressing is "Panic," a recurrent feature in war, which the young officer must study to enable him to eliminate and to suppress. General von Altmann illustrated his paper with examples both from the Great War and from earlier days. His opening was followed by a band of writers so large that the study was pursued through some ten numbers of the journal, when the editor had to call a halt to the contributions that were still pouring in.<sup>1</sup> From the examples given one might almost imagine that, at the opening of the War, when the panics were at their worst, Germany found herself in possession of a third-rate army, nervous to the core. Actually, however, as we know well enough, her troops were of the first class, well officered, well disciplined, well trained and fine fighters. If they suffered from shakiness of nerves, we may be sure that the soldiers of other nations were not free from the same ailment. Panics are in fact universal in war and therefore a subject for profitable study. They recur in many forms and places; in the individual soldier and, emanating from him to his comrades, in any body of troops subjected to mass suggestion; in back areas; among the people; in the intelligence service; among staffs; among commanders and in the high command.

The examples adduced in the *Militär-Wochenblatt* are of panics on the field of battle. A few may be cited. There was the headlong flight, on the evening of Jena, of Hohenlohe's army, pursued from the battlefield by Napoleon's cavalry. In connection with this incident, it is interesting to note that Gneisenau, who played a part therein as a subaltern vainly endeavouring to stay the rout, then acquired a useful experience to be utilised later in turning the tables on his opponents. After Waterloo, in another of the greatest of pursuits, when the Prussian cavalry he was

<sup>1</sup> Considerable use has been made in this paper of these articles as well as of a book entitled "Die Panik im Kriege," by Oberst E. Pfülf.

commanding were exhausted, he mounted drummers on the best horses, and with the aid of their lively music kept the disorganized French army continually on the run. Then there was a well-known incident of the 1866 Campaign. A Prussian cavalry regiment, making practically a peace march far from the enemy, heard sounds resembling shots in a neighbouring wood. The order was given to turn about and trot to the rear. The officers at once attempted to reach their places at the heads of their squadrons; and their galloping horses set the whole regiment into a wild flight, lasting for many miles and in which a battery was ridden down and many casualties occasioned. The cause, as so often in panics, was an absurdly minor matter. A regiment bivouacking in the wood had hung up its blankets and was beating them out.

Our own Army cannot claim to be free from such lapses. The writer remembers from his earlier days a night of desperate firing from a perimeter camp, just after the 1897 campaign on the North-West Frontier. The pet donkey of the British regiment of the brigade had strayed outside at nightfall and appears to have given the wrong countersign when challenged on attempting to re-enter. Being fired on, he galloped round and round the camp seeking a fresh place of ingress, drawing the fire of the whole garrison. In the morning he returned unhurt but hungry.

In the Great War there were naturally far more panics in mobile operations than in the trenches. At the beginning of the campaign the number chronicled by the *Militär-Wochenblatt* is astounding. This is especially the case with fire-panics, whole brigades, almost divisions, breaking out into fire, with guns as well as rifles, on the most trivial of pretexts, and causing heavy casualties amongst friendly troops.

Panics were particularly common in the Eastern theatre, though more so among the Austrians than the Germans. In 1914, a cry of "Cossacks" and a few shots put a whole division to flight, caused 150 casualties and immobilised the division for weeks, owing to damage to horses and vehicles. A few days later, a cavalry division moving off without protection and in close order into the morning mist, was surprised by a few shots from enemy scouts. It fled for forty miles, carrying other troops with it in the rout. At the end of the day there were squadrons that totalled less than five men. In June, 1916, when Brusilov drove a gap of 50 kilometres by 50 kilometres into the Austrian line, panic after panic occurred, because all units thought that Cossacks had got round their rear. Even good German divisions hastening to help were involved and two Jäger battalions, charged by some frightened horses in the dark, fell upon each other with the bayonet to cries of "Kosaken." The same battle also gave rise to an instance of panic in leadership. A battalion commander, followed by his orderly, rode up

to his general and reported his unit completely destroyed. "Not at all," said the general with a laugh, "you've still got your orderly." The colonel recovered his morale and turned back into the fight. Of panic in the High Command, the state of German O.H.L. during the Marne battle furnishes a good example.

Then there were other forms of the same disease. To begin with the car mania: in Germany *gold-autos*<sup>1</sup> were said to be taking French money through the country to Russia. It was, therefore, hardly safe to be in a motor at all, and patriotic citizens with the worthiest of intentions shot at many distinguished soldiers on their passage to the front. Our fancy in concrete tennis courts was just as chimerical and no less foolish. The spy mania, too, grew universal in Europe. There were heavy casualties, for example, among surveyors and among operators mending telephone lines on the roofs of houses. In our country two professors of mathematics, temporarily acting as teachers of topography, were observed to be taking angles and came under the suspicion of spy hounders. Having been completely disowned by their class, they were arrested and conveyed to the police station, while the cadets had a pleasant if unprofitable morning. The writer was himself arrested three times in France—twice seriously and uncomfortably, also once because a rumour that any one who captured a German spy would receive a month's leave was making the British soldier very active in the cause.

As to panics in back areas, the writer remembers during the retreat of March, 1918, a vast area showing up white and blue through the morning mist, the colours materialising on approach into the tents and garments of an Allied Labour Corps, which, at 4.40 a.m. on the 21st March, roused from sleep by the first gun in the great battle twenty miles away, had apparently fled *en masse*—less its uniforms.

The Russian Official account of the War in Manchuria is very frank on the panics both of soldiers and commanders. It is particularly interesting on the score of intelligence work. Captain P. reports "forty miles to the West of the Yalu, in the direction of Hai-Cheng, in a narrow defile in the mountains, the enemy has laid some mines. Near the electric exploder, a single Japanese is seated in the mountains." On the following day a correction follows: "The mines are on a plain . . . the Japanese is seated on the plain." Then another officer, observing a bombardment from the sea, mistakes the explosion of a shell on a hill, for the firing of a gun from the hill, and reports that the Japanese have landed and are rapidly advancing, causing Kuropatkin to order the withdrawal of a whole army corps.<sup>2</sup> Again, Mitschenko, the cavalry

<sup>1</sup> See JOURNAL of the R.U.S.I. for August, 1929, page 590.

<sup>2</sup> "The Campaign of Liao Yang." Special Campaign Series. (Constable & Co.).

commander, on encountering a few weak detachments, reports on one occasion the advance of 20,000 Japanese and on another of 50,000.<sup>1</sup> These were particularly gross errors; but what intelligence service has not suffered in similar if milder fashion?

The action of mass suggestion on the fears and courage of soldiers has been dealt with very fully by Gustave Le Bon and other writers. Exhausted or shaken troops are naturally very prone to fear. Such words as "Uhlans," "Cossacks," "Gas," may suffice to push their *morale* into the abyss. Yet the firmest friends of the Uhlans would hardly champion their true achievements in 1870; nor did the Cossacks show in Manchuria that they had inherited aught but the terror of a name from their Mongol ancestors. And "gas" can be effective often by its threat rather than by its action. Thus in 1918, a party about to salvage a limber exposed to close rifle fire were warned that certain cross-roads had been shelled with gas projectiles. They dashed across it, gallantly salved their limber and were traversing the cross-roads once more, when one of the detachment fell down gurgling and shouting "gassed." A stout sergeant seized the victim by the scruff of the neck and placed two kicks in an appropriate spot, whereupon the man promptly recovered. It was found afterwards that the cross-roads had after all not been recently shelled. So it comes about that the inferiority complex in troops opposed to a great commander or to a fine army is a great inducement to panic. Chinese soldiers have been known even to commit suicide rather than face a dangerous enemy.

But all these examples will be of no value unless lessons can be deduced from them. A study of the subject reveals certain causes of panic:—

- (1) Decadence of race, as evidenced in the Persians of Darius and the later Romans;
- (2) Undue physical exhaustion of troops. One of the worst of the German panics quoted from the Great War occurred in a regiment at the end of a very long march executed regardless of fatigue casualties;
- (3) Exhaustive employment of troops. At Custozza a party of seventeen horsemen routed an infantry brigade that had been marching and fighting ceaselessly for eighty hours. Again, a very fine German division heavily battered at Verdun, was withdrawn too early from rest to fill a gap in the Eastern theatre and fled at its first encounter with a quite second-rate enemy;
- (4) Operations at night, as at Magersfontein;
- (5) Indecision in command—order, counter-order, disorder;

<sup>1</sup> *Ibid.*

- (6) Bad staff work entailing counter-marches and lack of food and rest, as exemplified in 1870 on the French side ;
- (7) Surprise and lack of preparation, perhaps the most potent of all causes of panic ;
- (8) Lack of *esprit de corps*, discipline and training, as shown at the first battle of Bull Run, where 35,000 men of a fine, natural fighting capacity scattered like chaff before the wind once panic seized upon them ;
- (9) A weak organization, in which responsibility is either too greatly centralised or is obscurely defined; this is particularly conducive to panic in leadership ;
- (10) A tendency to magnify evil news ;
- (11) An inferior armament.

The trouble is almost entirely mental. Troops, perhaps at their weakest moment, are confronted with something sudden, unexpected, terrifying, and are thrown off their balance. Their whole mental horizon becomes charged with horror, their moral fibre disintegrates and they return to the savage state with no more shame or sense of responsibility than a herd of frightened cattle. Fear is their motive power, and it speeds their flight to a pace and a range that seem beyond human endurance and exceed by far any performance under the solid drive of courage or even the transports of enthusiasm.

One form of prevention is the suppression of panic-mongers, against whom heavy penalties should be enforced for the spread of alarmist reports, exaggeration of bad news and any words or actions tending to cause despondency either in the war-theatre or on the home front. But the principal form lies in the sound inspiration, organization, equipment and command of an army ; in fact it reaches far back into home life, the building of character and national traditions, as well as into peace training and war experience. Even in the best of armies, however, there are weaker vessels, and all new generations of soldiers have to learn their *métier*. Hence panic will always have a place in war ; it must be reckoned with ; its causes will still remain to be eliminated.

The cure of a panic, once it has started, is more difficult by far than its prevention. It may be effected by one or other of two modes of procedure ; either by the quick and decisive action appropriate to the occasion which nips the panic in the bud ; or by measures for actually stopping fugitives. The former is usually found in the bearing and action of the commander on the spot ; but it has taken many other shapes ; tunes on a penny whistle or a mouth organ ; the march of a band to meet the retiring troops ; a padre uttering a blessing just after the bombs have fallen ; the drums of the fore and aft ; loud hurrahs

from the officers ; blasts on the whistle—a particularly effective check ; the sudden display of a national or regimental symbol ; in fact anything that grips the mind and turns it from fear of death to thought of duty. There exist hundreds of such instances in history and in fiction.

The second method is well expressed by St. Cyr :—" *On ne peut guérir la troupe frappée d'un semblable terreur, qu'en présentant des dangers plus grands que ceux auxquels elle cherche à se soustraire.*" This was the common procedure in the Napoleonic armies. It was enforced at Wagram by Masséna who ordered his guns to fire on frightened fugitives approaching a bridge that would have broken under their crowded weight ; by Lasalle, whose veteran brigade had fled in disorder at Golymín, when he brought his troopers back to the battlefield and halted them idle under fire as a punishment that all might see ; and they suffered heavy casualties without complaint, recognising the justice of the penalty. Even the victorious Germans, in 1870, organized a special battle police for the ruthless suppression of the panic-stricken. Such measures too had a place at times in every army in the Great War, though no record of them may be found in official histories.

Undoubtedly the first method is the best. It saves the situation without loss of *morale* and without yielding to the enemy ; but, once troops are fully gripped by the fear of death and are on the run nothing will stop them save a greater danger of death, an impassable obstacle or the slow process of exhaustion. It is then a case where ruthlessness only will safeguard the existence of an army.

A word as to the future. Under the joint operation of peace projects and of mechanization there is a tendency towards smaller armies of longer service and higher training. Mechanization, too, will demand a higher intelligence, a wider distribution of responsibility and a more special pride in individual performance than of old. Moreover, the dispersed order that will be normally adopted by mechanical forces will obviate to a great extent the danger of mass suggestion—that powerful element in the demoralization of armies. All these factors are likely to reduce the probability of panics ; but they will not end them. Where equipments are equal, a high heart and a steady courage will still rule the battle. But machinery and doctrine must be up-to-date ; given that promise, it will be man rather than men, *morale* rather than numbers, that will weight the scales ; and a discipline as stern as ever will be needed to steel the mind against the shock of mechanical battle and the fear of a death of unusual horror.

## NAVAL STRATEGY IN THE GREAT WAR

### A GERMAN VIEW

BY KONTER-ADMIRAL A. D. BATSCHE.<sup>1</sup>

(late Imperial German Navy).

THE remarkable naval prize essay by Lieutenant-Commander J. D. Prentice, R.N., in the May number of the JOURNAL of the Royal United Service Institution, 1929, suggests its comparison with a little book recently published in Germany under the title "Naval Strategy in the Great War." Its author, Admiral Wegener, was during the war on the Admiral-Staff of the First Squadron, and took part in the battle of Jutland. The book, though firstly written for Germans, contains much to interest British readers. It treats the Great War, not from a partial point of view, but in the historical manner. It must also interest Britain because it gives an insight into German mentality before and during the war. It is of interest, also, to note how both authors handle the same subject in a different manner, yet both centre their observations around the aims of naval warfare.

It is more than natural that a navy such as that of Germany which was not able to avert the overthrow of its Fatherland, should constantly be preoccupied with the question of what were the erroneous conceptions which dominated German Headquarters, and how it came about that in a war during which two fleets faced each other for four years not one pitched battle was fought to an end. Wegener attributes this to the fact, that on the German side, the aim of naval warfare—that is trade routes and their control—was overlooked, whereas the British Admiralty, true to old tradition, was fully aware of this objective. He argues as follows:—

(1) *Strategical Position.*—An army marching or fighting, always has firm ground under its feet. The war aim, territory, is always present.

<sup>1</sup> Konter-Admiral A. D. Batsch was on the Admiral's Staff in the battle cruiser "Von der Tann" and in the "Graudenz" from 1914 to 15. He was second in command of the Fleet Flagship "Friedrich der Grosse" from 1916 to 17, including the Battle of Jutland. From 1918-28 he was at the Admiralty in Berlin, from 1920 onwards being specially employed in connection with disarmament and League of Nations matters.

In naval warfare upon the open sea, however, the war aim, the trade routes, is by no means necessarily always at hand. Their whereabouts is a question of geography. The geographical position of the *points d'appui* of the enemy fleet decides the course of the sea routes of the world. The geographical position of the two fleets confronting each other is thus the deciding factor in naval warfare.

Let us take, for example, the Dutch-English naval war of the XVIIIth century. Here we find the two opponents, in the natural, strategical, positions created by their coasts. On one side we have the Thames, on the other the Dutch coastline, and running between the two the world trade routes leading to the Thames and to the Dutch ports. Neither of these two positions could have been bettered, and there was no other particular point to be aimed at by either opponent. Both were therefore on the strategical defensive. Both positions were more or less equal, and therefore the English, as well as the Dutch, were able to exercise mastery over the sea, that is, were able to defend the sea routes, upon which their existence depended. This example proves, therefore, that for naval warfare, the indispensable factors are: a fleet and a strategical position. Should the balance of power over the strategical position for one of the sides dwindle, the trade route comes more and more into the possession of the owner of the stronger position until a point is reached when the inequality is so aggravated that the weaker side is completely cut off from its vital cord. In spite of its possessing a fleet no combat ensues.

In the late war Germany was in the position of complete strategical inequality. From her bases inside the North Sea it was impossible for her fleet to reach the vital cords of the world sea routes, much less to control them. The control of sea communication is, as Lieutenant-Commander Prentice confirms, the object of the greatest care of any Admiralty during a naval war. A trade route, the objective in every naval war, did not exist for Germany in the North Sea during the war. Therefore a struggle for naval supremacy, i.e., a naval combat, was no longer possible, nor had it any meaning.

The creation of the German fleet, and the plan of operation for a purely defensive war, had originated in ideas utterly foreign to the real character of naval warfare. England, on the other hand, thanks to her geographical position with regard to the trade routes possessed the command of the sea. Not so Germany.

These erroneous German ideas about naval warfare can clearly be attributed to Germany's past and to her entirely continental history. Purely military ideas were mixed up with the conception of naval warfare, until they blinded German statesmen and German Headquarters

to the fact that a fleet must have a strategical position from which it can reach the object of the war, the trade routes. German mentality had conceived the idea of sea power as being an equivalent to land power, i.e., strength depending upon the size of the forces. This failed to take into account the strategic geographical positions indispensable in naval warfare.

Again, if we examine this German conception of a naval defensive war in the North Sea, we find that when one defends oneself on land, one means by "one's self" one's country; a position, in short, some sort of solid possession. On the sea, also, one can defend some positive thing, such as a coast, a trade route, or a prize, but not actually "one's self." In the No Man's Land of the sea these conventional, solid, possessions do not exist at the back of the "one's self." A defensive coast line war, however narrow its scope may happen to be, is an actuality, whereas a defensive war, when it is not clear what there is to defend, is an unreality.

Manifestly at sea no war of defence is actually possible; but, in spite of that fact, to insist on it is a purely military conception. Every war aims at taking something the enemy possesses. Even the smallest peoples have their possessions, which an enemy covets. Therefore the latter attacks; the weaker defends "himself." But the open sea belongs to no one. Any "possessions" one can have on it, are ships, ships plying on the trade routes. So, in war, only those who, through their geographical position, command these routes can have "possessions at sea," but this has nothing to do with the strength of the respective fleets.

Therefore England, because she alone was a "possessor," from a strategical point of view, waged a war of defence, and with perfect right did not attack. The moment war was declared, Germany lost her entire possessions, with the exception of the Baltic. For the German fleet, with no "possessions" to protect in the North Sea, there was now no sense in a defensive war; and the so-called staking of the German fleet at the close of the war, so as to bring about some definite decision, is pure fiction. The German fleet presented the picture of a fortress which stands or falls; it can injure the enemy locally and in a military sense, but it does not help towards recovering or reconquering the lost possessions which he holds.

The thought of running risks, the so-called "Risikogedanke," which, in waging a defensive war, ignores "possessions," and started with the idea that the Germans as militarily the weaker should be on the defensive, and that England as the stronger should do the attacking, is a purely land military idea. The English passive "wait and see"

plan of operation was therefore right. It was based upon England's geographical position. The German plan of operation revealed a conception of naval warfare, in complete contradiction to the very essence of the same. England trained by four hundred years of history in naval warfare based on a living "seaborne commerce," instinctively perceives what sea power means. The conditions of naval warfare have practically gone into the blood in England, whilst in Germany a sure instinct about purely land military matters, based on a moribund conception, prevailed. The influence exercised by the historical antecedents of a people is immense and has proved itself stronger than misunderstood facts and superior intelligence.

(2) *The Battle in the North Sea.*—Every naval war is waged for the Freedom of the Seas—for the defence of a country's own shipping. Through her geographical position alone Germany lost that freedom when England declared war on her. For, in war, only he who through his geographical position commands the trade routes retains his freedom. By merely staying silent in its strategical position the Grand Fleet robbed its opponent of the Freedom of the Seas, and by making use of its geographical advantages *alone* it brought Germany to her knees. One might therefore have fought as many battles in the North Sea as one wanted—granted one was given the chance; the geography upon which everything depended would not have been changed thereby, and the Freedom of the Seas would have remained as before unattainable for Germany. Consequently, the idea of staking the fleet in the North Sea could lead to no final decision.

Only through a strategical offensive, such as, let us say, creating a German-Danish or German-Norwegian *point d'appui*, could this inequality have been overcome. But Germany refrained from this attempt. Thus the English fleet, running no risk for the ownership of the trade routes, could afford to lie low. But when both opponents refrain from battle, it is clear neither wants anything from the other. And no one fights for nothing. In such a case, there is no more question of a battle.

Except by some accident a battle which is not necessary is never fought; it was therefore perfectly natural there should have been none during the four years of war. For there are forces that the French call "*les impondérables*," in this world, such as the feeling of responsibility of the leaders, and this held good for the British just as much as for the Germans' Commanders-in-Chief. Both carried the responsibility on their shoulders of their country's naval power, so had to be perfectly clear before their own conscience about the inevitable necessity of giving battle. Only when the existence of one side depends upon obtaining

something vital from the other side, the loss of which would mean the loss of life to him, do battles ensue. Never otherwise. This issue, the trade routes, was non-existent in the North Sea. So if a battle is robbed of its essential aim, that is the possibility of its being a deciding factor, no encounter of the opponents under these circumstances could produce anything further than material destruction.

Either opponent could easily have forced a battle. It would only have been necessary for one to have gone to the other's coast, and to have waited until he chose to come out. Inevitably a battle would have resulted. Viewed from a strategical point of view, a battle of this sort would have presented the following aspect. For the party which is being attacked it comes under the category of defence. It has no strategical purpose, but he is forced to defend his coast. The attacking party drops the defensive role. It has no strategical object for him. For him it becomes a purely tactical undertaking, with destruction as its only aim. But a struggle practically upon the enemy's very threshold is strategically the worst possible place imaginable. A battle in the North Sea, beyond home waters, that is, in their widest sense, was a task beyond the defensive capacity of either adversary, a task superior to the defensive necessities of both adversaries. Such a battle would have resulted for both parties, in a series of purely tactical operations, with the sole object of injuring the opponent. Consequently, whether they admitted it or not, both parties were only prepared to give a battle of this sort under favourable circumstances and in a favourable spot.

But a favourable opportunity for inflicting damage, depends upon local superiority. Under no condition dare the expedition eager to inflict damage run any risk of being defeated itself. Consequently, both parties seem to be exposing themselves in positions, which they no longer command securely. Directly the word "risk" is breathed, the desire to inflict damage promptly dies out. That is why the wish to carry out these damaging expeditions has no staying force. Under such circumstances a fleet ceases to be the instrument for war, and sinks into a mere tool for inflicting damage.

This sort of naval warfare ignores the most important strategical moments, and becomes a game of "grab" after some good chance, in which luck is the chief factor.

(3) *Naval War and Foreign Policy.*—Strategical positions which one needs, but which one's coasts do not offer, are necessarily in the possession of other nations. Strategy at sea is, therefore, to a great degree a task for foreign policy, which through treaties has to endeavour to obtain the positions which its country will require in a case of war. England's entire naval history is a proof of the need for interdependence

between naval strategy and politics. Wegener states that, in her continental and purely land military conception of sea power, Germany, looking upon her fleet as an independent entity, never realised this. When building a fleet in peace time, it never entered into the calculations of German politicians, that it entailed a policy of treaties, or that there must be an analogous war policy.

From the beginning of this century on, Germany has become an industrial State and is thereby now in the same position as England. She is no longer self-sustaining and depends upon imports to feed her population. During the war the German people starved. In spite of this the German manner of making war clung to its traditions, and sought the outcome of the war on land and not where it really lay, i.e., on sea. The German Fleet, banned to the strategical position of Heligoland, logically tried to find her *raison d'être*, and her war aims, in the North Sea where neither was to be found.

The Chairman introduced the lecturer, stating that in addition to being in command of the Royal Army Service Corps Training College at Aldershot, he possessed exceptional qualifications for lecturing on this subject.

#### LECTURE

THE last thing I wish to do in this lecture is to offer a précis of existing regulations either of our own or any other army. Rather I propose to speculate as to how modern developments are likely to affect our supply arrangements. It seems therefore, best to illustrate by means of a diagram, my remarks as to how our doctrine stands at the moment. I will further state that in this whole question of a mechanized force we have no need to act precipitately, since we have the Army Council's authority for assuming that a great war need not be anticipated for a long time. The Army is, in fact, far from being period of gradual expansion, and we are a mechanized, and consequently we still stand a long way from a complete re-organization of our land forces.

#### CONTRASTS PRESENT IN THE GREAT WAR

As the fighting soldiers develop their ideas it is the duty of the administrative soldiers to observe what these ideas are, and to notice in what way administration in the rear of any army is likely to be affected. We have, therefore, to start with the existing regulations, which represent the conditions of 1918. They are not so much a forecast of the future as a summary of the experience of that year. It was

Colonel Cameron related throughout his lecture to the accompanying diagram which is set at the H.A.S.C. College for the purpose of instruction young officers in the technical duties of the Corps.

between naval strategy and politics. We have seen that in her conception and purely land military conception of sea power Germany looking upon her fleet as an independent entity, never realized this. When building a fleet in peace time it never entered into the calculations of Germany politicians that it might be required in time of war for the defence of the German colonies.

## THE SUPPLY OF MECHANIZED FORCES IN THE FIELD

From the beginning of the war Germany has become an industrial state and is thereby now in the same position as England. She is no longer a purely agricultural country. In spite of this the German people started.

BY COLONEL D. C. CAMERON, O.B.E., R.A.S.C.

On Wednesday, 27th February, at 3 p.m.

LIEUTENANT-GENERAL SIR W. HASTINGS ANDERSON, K.C.B.,

Quartermaster-General to the Forces, in the Chair.

THE CHAIRMAN introduced the lecturer, stating that, in addition to being in command of the Royal Army Service Corps Training College at Aldershot, he possessed exceptional qualifications for lecturing on this subject.

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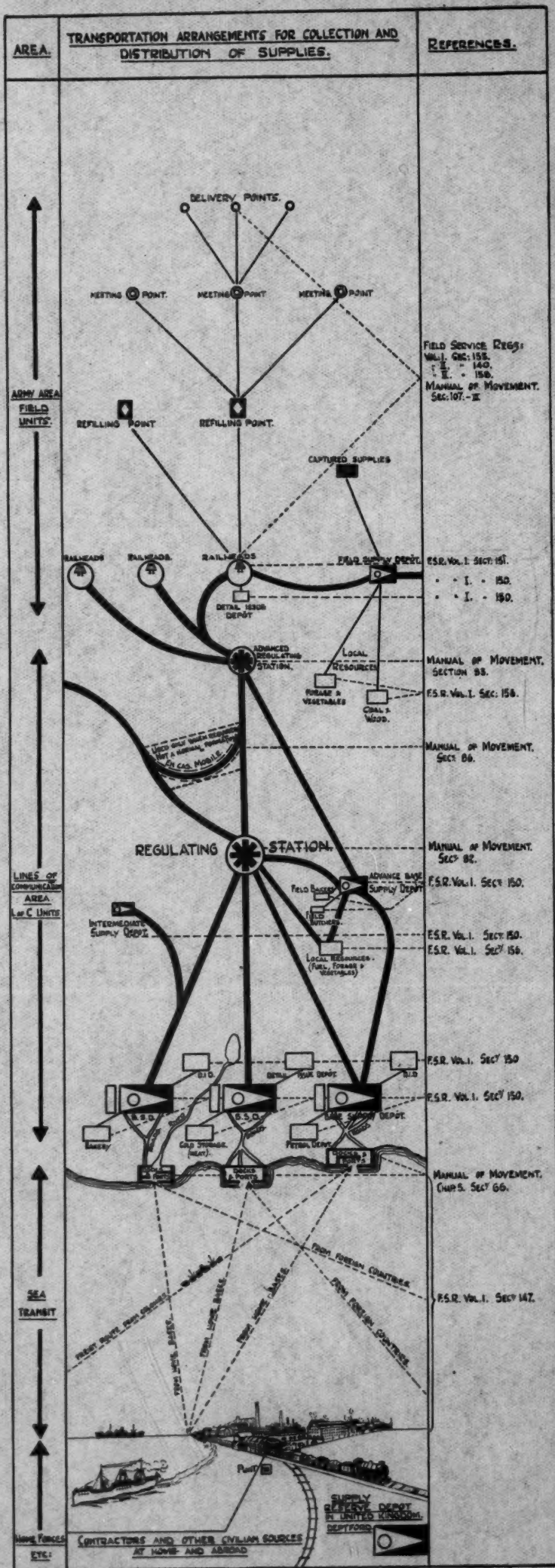
### CONDITIONS PREVALENT IN THE GREAT WAR.

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<sup>1</sup> Colonel Cameron referred throughout his lecture to the accompanying diagram, which is that in use at the R.A.S.C. College for the purpose of instructing young officers in the technical duties of the Corps.









a very far-reaching experience, and we might well hesitate before offering to re-write it all in the form of a forecast. Nevertheless, when once it is recognised that our regulations are based on this experience, it is fair enough to examine anew what the conditions of that experience were, and ask if they are likely to recur in the future.

In the first place we have to admit that the air is likely to be an increasingly important factor. Enough at present to say that in the late war it was possible to keep in action such establishments as Base Depots, Regulating Stations and Railheads. These suffered from hostile action no doubt; but they were rarely put out of action for long. Then again, we held only a precarious command of the sea, and there was continuous pressure upon overseas troops to become self-supporting, in order to economise shipping. This pressure extended over the whole field of administration. I remember our opening a coal mine in Greece, complete with railway to the coast, from which we never obtained more than a few hundred tons of brown coal. I remember mobilizing a battalion of ploughmen, complete with teams, to plant potatoes in some of the richest tobacco land in Macedonia. Never were such potato plants seen; they grew and grew until they would have made suitable cover for tigers. They had the largest and most beautiful flowers, more like rhododendrons than anything else. But when the actual roots were dug up, nothing appeared bigger than a row of peas on a string. These extravagances were justified, since nobody knew what was going to happen at sea. Accordingly it became the rule to try any experiment. Naturally this attitude of mind resulted in the principle that everything must be obtainable on the spot. Directorates and administrative officers felt that they must carry enormous reserves; that they must be able to undertake all kinds of repairs against any possibility of disaster. It was felt that each theatre of war must be self contained.

As a result, there grew up in the overseas theatres of war systems of docks and sheds, depots and stores, petrol tanks and installations, engineer stores and canteen establishments, hospitals and medical stores, laundries and repair shops, salvage dumps and reinforcement camps, all on the largest and most permanent scale. Once these establishments had sprung into being they came to be regarded as natural and inevitable, as part of experience. So they have imposed themselves on our regulations, and reproduce themselves in every Administrative Staff exercise. One struggles to cut them down in vain. The reason is that we are dealing with Directorates, very difficult people to treat, since they wrap themselves up in technical mystery like a hedgehog in its spikes. If pressed, they can and do threaten disaster, and like Cassandra they probably believe in their own doom.

The fighting men who have considered the problems involved in the setting up of these unwieldy establishments, all together within a few miles of enemy aircraft bases, know perfectly well that it is not a practicable operation of war. Does anyone believe any longer that a single seaport could serve as the base of a large army? Does anyone believe it practicable, in face of the air menace, to work a system of pack trains whose trucks are shuffled daily on a specially constructed railway grid at a Regulating Station? I think not. The plain fact is that if we leave these ideas unchanged the mobility of a mechanized force will be confined to the few short miles before the grip of battle. Here the commander may swing his army about as he pleases. Further back he will be pinned down to earth by the weight of his own establishments. The arm of military force has been tied down at the wrist, so that it can only fight with its fingers. Under such conditions, the more we adopt mechanization the more immobile we shall become.

How do the fighting men, as distinct from the administrative people, regard this state of affairs? In my experience they regard all this line of communication business as a rather mysterious thing with which they are very little concerned; or just as part of the game. They look at Field Service Regulations, Part I, and say, "This was invented by some Higher Authority. We begin here, in front of the railhead." And they study very hard and do their very best to make the thing work from there onwards. But they find it a desperately difficult task; because in the narrow space between railhead and the battlefield everything is concentrated until it becomes chock-a-block. There is not room for the vehicles to hold all the stores which the fighting men wish to keep in view, just as the British traveller loves to get all his baggage into the same compartment as himself.

#### A FORECAST OF SUPPLIES FOR MECHANIZED FORCES.

Now let us speak about forecasting and provision. Whenever the British Army, or any other army, goes to war there are certain people told off to make a forecast of its requirements and arrange for their provision. It is rather a technical business and I sometimes think there is insufficient sympathy for those on whom the task falls. We all know the story of how Wellington sent for a commissary who was unable to produce something. I am not sure if in those days a "commissary" meant an Army Service Corps or a Finance Branch man. Anyhow, he was a commissary, and Wellington sent for him and told him that if the supplies were not produced by the next day he (the commissary) would be shot. The story gravely goes on to relate that the supplies were duly forthcoming. That story always brings a glow of satisfaction

into the hearts of all good fighting men. "That is the right idea," they say; "that is the way things ought to be done!"

But really the business is a good deal more complicated than that. For instance, in our latest little expedition to Shanghai, we brought ammunition from Home and from India, mechanized spares from the same two places, beef from Australia and the River Plate, flour from Canada and Australia, vegetables from Japan, fuel from Singapore, and so forth. This task involves complications due to the time necessary for trade enquiries, acquisition of freight and a hundred other things. As a result the forecaster really has to be sitting at his desk in March or April while living in thought in November; and there is this peculiarity about the business—if he does his sum wrong, or omits any factor, nothing will immediately go wrong. But sometime, say in June, he will wake up to the discovery that not only will there be a shortage in November, but that no power on earth can put it right.

Such a man of course has a good many data to work upon, based on previous experience. His main difficulty will be numbers, strengths, as to which he will find he gets but little guidance, and probably for very good reasons. But there will also be running through his mind what might be called the factor of the campaign, the kind of adjustment he is likely to make in his calculations because of the peculiarities of the particular enterprise.

I would now like to run through some of the main requirements of an army, and, taking each in turn, consider how far its supply, as a matter of forecast, is affected by mechanization. It seems to me that possibly one may, in this way, throw some light on the problem of the Line of Communication. One may strike on ideas which may ultimately influence organization.

The first thing that our forecaster on behalf of the mechanized force will see, is that he can be certain that he will get nothing from the resources of the country. The first idea of the mechanized force is to move fast and to hit hard. If the war is kept mobile there will not be time to organize anything of the kind. He must put out of his head, too, the idea that such a force can load up weeks of stuff and take it all along. The condition of mobility forbids that. No: the force must be tied in some way by a regular current of supplies reaching it regularly. It has got to be tethered by an umbilical cord, and this is not a bad comparison, because, of course, petrol is the life-blood of the whole organism. It has to be supplied with absolute regularity and certainty, and in quantities very much greater than anything ever contemplated or recorded before. Everything depends upon it. Even ammunition is secondary; for without petrol the force cannot even run away. But

as an article of supply, petrol possesses one peculiarity, that is, its explosibility. Our forecaster will not have got very far with his multiplication sums before he will see that the quantities he has to deal with absolutely cannot be heaped up in tanks at bases and regulating stations and railheads. They must be scattered all over the countryside, and dealt with as Nobels deal with other explosives, so that not much could be destroyed by one lucky bomb.

Let us now turn to ammunition. Here we have plenty of data and method from the past. But we encounter two new factors. The first is of course the same as in the case of petrol, the need not to put all your eggs in one basket, a condition which again throws suspicion on the railhead idea. The second, however, is the encouraging conviction that ammunition cannot be required in the same quantities as were contemplated in the past. The whole idea of the mechanized force is to keep war mobile, and, if this is done, the heaping up of mountains of shell before any advance becomes unnecessary.

On the other hand, there suggests itself to you one obvious exception. If you have a fixed line of communication, complete with all these concentrated establishments, you have to be prepared to defend them against the air; and that involves being prepared to fill the sky with bursting shell. If anyone will calculate the cubic size of the sky, reasonable margin being allowed, and divide the result by the cubic space covered by a shell-burst he will get some rough idea of what the problem really amounts to. That is regarding it as shell provision only; I am not even considering what the loss of guns and gunners means, all of whom might be in the firing line at the decisive point. This provision, however, applies only to the case where we have deliberately set up a fixed line of communication with bottle-neck points, which have to be defended at any cost. Bar anti-aircraft work, a mechanized force does not propose to return to the shell consumption of 1918.

I now turn to the provision of engineer material. In the old warfare this was one of the bulkiest and most difficult of supplies. The building of fortifications, railways, Decauvilles, the repair of roads and the erection of every kind of building required by static war involved an endless supply of metal, timber, stone, brick and so forth. The new war can only be a struggle between the mechanical and the constructional engineer. So long as the mechanical engineer can keep the war moving there is comparatively little use for the constructional engineer. Fortification is not required because it can be avoided. Road repair is comparatively unimportant because the new vehicles neither require such good roads nor do they destroy them so fast. One may anticipate that while the campaign will be shorter, it will change its terrain. It will

not be a case of solid-tyred lorries pounding the same paths for months, but of air-filled tyres rolling over different roads weekly.

If however, the demands of the constructional engineer are reduced almost to nothing, the demands of the mechanical engineer are greatly increased. There is the whole question of spare parts, replacements and repair to consider. And the forming of a sound opinion as to what this problem means is very difficult, because we do not know—at least I do not know and I do not see how anyone can—how the special track vehicles will affect it. In the case of transport vehicles proper, that is, vehicles normally in ordinary civilian use, the tendency is clear. You will not repair them in the field at all. The fact is that large users of mechanical transport in this country do not nowadays repair vehicles in the sense in which people think of repairs in the field. They withdraw them at regular intervals and re-build them by mass production methods. From a new vehicle or a re-built vehicle you can nowadays expect enormous mileage without breakdown. The method in any future war must be to flood your theatre with new vehicles and when necessary to replace them with others. I shall come back to this question.

Now as to food, fuel, disinfectants, etc.; these belong to the Army Service Corps group of supplies, which long ago acquired the distinction of being absolutely regular in their quantities. It is reasonable to suppose that strengths of personnel will be lower in the mechanized force. Moreover, oil will be available as fuel without any serious increase in bulk. The complete absence of forage will be a delight to all supply officers. These are all points to the good.

I now come to the question of baggage, with all the paraphernalia, such as greatcoats and blankets, with which the soldier makes himself comfortable at night. Of recent years baggage on manoeuvres has been a most serious difficulty. But I believe that this difficulty has been somewhat exaggerated for one or two reasons. In the first place it has so happened that it has been necessary to send out on manoeuvres a large number of hired, old, 3-ton lorries, which have nearly always been allotted to baggage duties. Being so immobile and difficult to handle, subordinate commands have almost refused to let them out of sight. They knew if they did so they might never see them again. The mechanized force of the future will be better equipped, and will trust its baggage at greater distances. Moreover, mechanized forces are in a much better position to do without baggage than marching infantry. They are like the old cavalry. When the time comes for rest they can withdraw a space to enjoy it. They will not have to lie down where they stand, utterly exhausted; it is then that the infantryman absolutely must have his baggage.

There are, of course, countless other matters to consider, all of them pointing the same way, namely, that a mechanized force will make immensely smaller demands on supply than anything we have seen in recent wars. If then an impression prevails that the more you mechanize the less mobile you become, that impression is not consistent with the facts. The diagram may have influenced us unduly in the matter, so let us put it out of our minds.

#### THE EFFECT OF INDUSTRIAL PROGRESS ON WAR.

I now ask you to look at this question from another angle. I might begin by saying that Sir John Fortescue has undertaken on behalf of the Regimental Association of my Corps to write a history of the Supply and Transport services of the British Army. Now I am not in Sir John's confidence so far as to be able to forecast the way in which he will shape his narrative. But I imagine that he will find it difficult to dissociate it from that of the contemporary progress of civilization.

War is most deeply influenced by two things: armament, and the general progress of civilized life. Some examples are obvious. One might balance the needle-gun and the development of railways. But there are very few great steps in the progress of mankind which do not within a single generation alter very deeply the character of war. I will give you an example. That great Frenchman, Pasteur, in my life-time, as a by-product of his infinite labours, threw out a little paper in which he suggested that putrefaction was probably due to micro-organisms. That paper, by one channel, that of Lister, gave rise to the antiseptic treatment of wounds. This not only saved more lives than were lost in the Great War, but also brought back into the firing line hundreds of thousands of men who otherwise would never have returned to the armies. By another channel it gave rise to the great frozen meat and canning industries which made possible the concentration of the enormous armies, which gave the Great War its peculiar character.

I will give you another example. I lately read, once again, the campaign of Ulm, the campaign in which Napoleon, starting from the camp at Boulogne, swept across Europe to surprise and surround the Austrian Mack at Ulm. I re-read it in Alison, whose rolling periods make it an engrossing and deeply interesting story. He is full of praise for the energy and drive of Napoleon, while criticising the lethargy and incapacity of Mack. He does not see the story as a supply problem at all, and that, to my mind, is rather curious, because, in view of the shape of his history, Alison pauses every ten years or so to review the economic and agricultural development of Europe.

The facts were much more complicated than a mere comparison of the characters of commanders. Mack was far from being a useless old

jackass. No less a person than William Pitt had invited the Aulic Council to appoint him on account of his known energy. But that energy had been solely applied to the sphere of tactics. As far as transport and supply were concerned he had inherited a system twenty years old, a record of experience, and a system under which magazines on a great scale were set up in the neighbourhood of the projected battlefield, so that the commander then put supply out of his head and concentrated his thoughts on tactics.

Meanwhile, the material of the art was changing. Great agricultural developments, great increase of population had brought into existence richer farms, more labour, better roads, more horses and wagons, and better local administration. What had been impossible had become possible, if only the truth were observed. And Napoleon was of course the man to observe it, not merely because he was a genius, but because he was personally concerned with economic and agricultural development. These were as much his function and interest as was war. The result was the bringing into action at Ulm of forces on a scale so unexpectedly large that the laboriously collected magazines at Ulm were ultimately used by Napoleon and not by the Austrians.

Now let us ask ourselves what are the main movements of civilized life since 1918. In the first place, rationalization of industry in the sense of mass production. I am not speaking only of the motor car; it is the increased power of organization which makes it possible to produce on a large scale what is required. In effect, it is the substitution of one process for another. Before the war, tobacco was distributed in bulk, even down to quite small shops. To-day the little ounce or two-ounce packet is made up centrally in millions and distributed all over the world. It is a system under which, as an Army Service Corps officer would say, the detail issue is made further back.

This revolution can only be fully appreciated by travel. It is then that one can observe how the small shops in a Chinese or Canadian village produce to your view the same commodities packed and marketed centrally in exactly the same way. So behind this phenomenon there lies in reality a fluidity of commercial organization which was not in existence in, say, 1910. It means that a Government can now command a system of manufacture, distribution and packing which simply did not exist twenty years ago.

#### RAILWAY AND MOTOR TRANSPORT.

The second, no less important change is the defeat of the railways by the motor vehicle. I ask you to examine this problem with me from the point of view of war, remembering, in the first place, that the struggle,

as we have seen it conducted in the competition for traffic, and debated before half-a-dozen Transport Commissions, has been an economic struggle. A penny or two a ton has been able to sway victory to one side or another. That is a consideration which does not enter very largely into any military problem. The railways contended that, when this phenomenon suddenly dawned on them and on the world, railways seemed likely to go the same way as canals, so that the first step in fairness should have been to re-organize taxation, and pointed out that they were not only maintaining their own permanent way, bought and built at an enormous cost, but, through the rates, they were maintaining the permanent way of their rivals. The Government met them in full. The motor is now as fully taxed as the railways, and in the main keeps up its own permanent way. British Governments are never revolutionary and in effect have endorsed the policy that the railway companies, which have served us so well in the past, should not only have fair play in the sphere of taxation, but should be given opportunities of transferring their activities to the roads.

What, then, is the actual position purely as an economic matter? It is that the railways have been defeated in the competition for every kind of task which we have come to regard as likely to be necessary with a mechanized force. The railways retain nearly all the mineral traffic. But we have eliminated that as not required. Even in cases where the cost of the road journey is, on paper, considerably higher, the road vehicle more than holds its own. The convenience of going from door to door, the possibility of a real responsibility, the saving of time, all these tell. It is the story of the railways and the canals over again. It is the fashion to say that the railways bought out the canals and then crushed them. But the truth is that it was the lack of elasticity in the service given by the canals which destroyed them. And the same is true of the railways in turn. The battle is a lost battle even in the economic sphere. How much more so in the sphere of war?

There is a great difficulty in realising the continuous improvements in the performance of the motor vehicle of to-day. It is really infinitely superior to the 3-ton lorry of the Great War. I am not speaking of the special track and articulated chassis vehicles: these of course do not exist in numbers which affect the problem at all. It is the vehicles in ordinary commercial use which are infinitely superior; they do not skid; their brakes work better; their clutches take up the drive smoothly and easily; they can reverse, turn and move off more quickly. Comparatively speaking, the old lorry was a nightmare.

It follows, therefore, that traffic tangles rarely occur, and, when they do, they tidy themselves up automatically and easily in a way which

was formerly impossible. This result is often ascribed to improved traffic control: it is mainly due to technical improvements in the vehicles. The stream of vehicles, passing in both directions happily and easily through towns like Guildford and Reading, is capable of carrying greater tonnage than was ever put over the roads behind the Somme. The essentials are that traffic must move fast and in loose order.

I would have liked to leave this examination of the position at the stage to which I have brought it, but I fear it is my duty to go further. We have seen that the old line of communication idea, as experienced in 1918, is no longer possible in any case. We have seen that the demands imposed by a mechanized force on the controlling authorities are, given that it attains its ends, infinitely less than the demands which the old line of communications was capable of producing.

#### TWO PRINCIPAL FACTORS IN MECHANIZED WAR.

There are two principal factors in mechanized warfare. The first is that the true danger of aerial attack can be eliminated by a process of dissemination of the target. The forces of the air, no less than those of any other military arm, require to be concentrated at the decisive point. I do not know where that is likely to be. It is a big and controversial question. It may be the enemy's capital, or it may be the struggle for the supremacy of the air. But I am quite sure that it is the duty of administrative officers to see that there is no decisive point along the line of their arrangements.

The second is that if a mechanized force is to derive full advantage from its mobility it must not be tethered, like a watch dog on the end of a short chain, to fixed points like railheads. Committed to the latter, it would be committed to them for good, as Mack was committed to sitting down by his magazines at Ulm. That will not do at all. A mechanized force must be free to move where it will, to retire or advance, to move right and left, as the struggle dictates.

I will give you a sketch of the kind of way in which I conceive the thing is possible. The country in the rear of the mechanized force will be flooded with munitions and supplies scattered all over the maximum area, and controlled centrally by a system which does not seem to present any great difficulty. Working throughout this same area will be sufficient provision of mechanical vehicles to make possible the transport anywhere in the area of the necessary supplies. In effect the line of communication of old will be an area. It will present neither to the air nor to roving columns of armoured vehicles a target which will in any way repay an enemy commander for consenting to detachments which will weaken him at the decisive point. I do not wish to exaggerate

the possibilities. It is impossible to conceal either a line of communications or an area of communications from the air. But it is possible to store so small a quantity of your supplies in one place that it is mere waste of immensely more valuable material to set aeroplanes or raiding tanks at work to destroy them. There is a balance between what you can destroy and what you must expend in the destruction.

I will give you an analogy—at one time in Salonika we had snipe grounds in our area thicker with snipe than I have ever seen snipe anywhere. They were like titlarks in the heather. Cartridges cost elevenpence each, so that if you could average hit-and-miss (and nobody could do much better than that) your snipe cost you one and tenpence each. In the end nobody shot snipe much; duck and geese, yes; but not snipe. In war it is not possible to avoid losses; but these must be snipe, and the enemy must spend one and tenpence over each bird.

I will now conclude by saying that I can imagine some cynic in my audience saying to himself, "Now, I wonder how far even the lecturer believes all this himself; is it even possible he is gulling this learned Society? Where does he get all these ideas from?" Well, I can answer him. In the first place, I think if there existed a real mechanized force anywhere in Europe, my story would be perfectly true. But of course it does not exist. There is at present nothing more than mechanized assistance to forces of the old type. The great changes I have described to you have happened in the last ten years; in another ten years all may have altered. For all I know the traffic may be all across country or in the sky. And as for where the ideas come from, I think mainly from the young administrative officers of the Army with whom I come much into contact. It is said that in a lecture the great thing is to concentrate on one or two points only; then there may be a chance that your audience will take them in. I have tried to make two points only. The first, that the methods of war and the progress of civilization are connected year by year and day by day. The second, that it would be a calamity to allow our young fighting officers and our young administrative officers to live in water-tight compartments. The best insurance against the possibility of administration lagging hopelessly behind strategy and tactics is to make certain that the young administrative officers are in close and constant touch with the young fighting men.

#### DISCUSSION.

**MAJOR-GENERAL C. BONHAM-CARTER:** There is much to stimulate profound thought in the lecture which has just been delivered, and I would like to raise one or two points.

What are we trying to do when we think about mechanization? We are trying to ensure that war in future shall be mobile. If a great war were fought

again in the circumstances of the last, the victors just as much as the vanquished would be ruined. If we are not successful, therefore, in planning mobile warfare, the only sensible advice that the military advisers of the Government could give, in the event of the danger of a great war, would be to avoid fighting at all costs.

The armies of the future will consist of formations similar to those we have known in the past, but made more mobile by the provision of mechanized transport which will be more efficient and rapid. In addition, there will be armoured formations whose degree of mobility will be greater still. Both, however, will depend, as before, on a steady stream of supplies of various sorts which must come up from the rear services day after day in exactly the same way as before. It will be just as impossible, in the future as in the past, to cut ourselves adrift from our lines of communication and the steady stream of supplies that they produce.

Great difficulties are likely to arise because, if armies can advance at great speed, the supplies coming up from the base must advance at even greater speed and although, as Colonel Cameron says, it is very difficult and risky to foretell the future, it is one of the things that we have got to do if we are to be in any way prepared for the next war, and in looking to the future it seems probable that we shall have to develop our transport in the same way as we see the transport developing on our roads every day. Lorries getting larger and larger, but at the same time, more and more reliable, until we shall not be far from motor trains.

There is one other form of transport that may help us in emergencies to provide supplies for armoured formations that have moved beyond the powers of motor vehicles to reach them with absolute necessities and that is aircraft. Aeroplanes that can carry twenty to thirty passengers can undoubtedly carry sufficient essential supplies to keep an armoured force alive and moving.

MAJOR-GENERAL DAVIES: We all appreciate the advantages of mechanical transport. On the other hand, with the large volume of supplies to be carried (using the term "supplies" in a very broad sense), I consider that railways must continue to play a dominant part in war, especially in countries where roads are not so good as they are in Europe. I do not dispute that the lecturer's vision of all replacements and no repairs in the field will be realised as a campaign progresses, but it will certainly not be the rule in the initial stages.

Another point to which I should like to refer is the relationship between the mechanical engineer and the constructional engineer. There is the problem of bridging to be considered; consequently, field bridges will have to be strong enough to take increasingly heavier mechanical vehicles. Co-operation between the two branches of engineering is therefore most essential.

COLONEL F. A. PILE: I should like to ask the lecturer two questions. He stated that the amount of traffic that is now passing through Guildford is greater to-day than the amount of traffic that went on behind the Somme battlefields. He seemed to suggest that traffic to-day is rather a happy-go-lucky sort of business. Will he enlarge on that subject in his reply and let us know how he proposes to control traffic in war. Further, perhaps he would say how he regards it from the fighting point of view. It was interesting to note what a poor average speed the Mechanized Force tanks were able to maintain last year. Their average was about 6 or 7 m.p.h., although individual tanks were capable of more than twice that speed. The reason was that one tank was always going uphill and the other downhill, and as a result we were always catching up and checking. We allowed no passing, and as a result our speed was very slow. I wish the lecturer would tell us how he proposes to make these convoys go very much faster.

I presume much as a motor tourist goes down to Brighton on a Bank Holiday, when he has numerous policemen on duty to smooth out the blocks. I would also like to refer to the question of the supplies required for a mechanized force. Our petrol to-day corresponds very much with the hay, oats or other forage of previous wars; that is to say, it corresponds to motive power. To-day petrol is by far the biggest problem arising out of a mechanized force. Recently, when we were discussing what we proposed putting into a tank, one engineer expert warned us that the horse-power we required would need one gallon every two minutes. Even with this consumption the daily petrol tonnage will be less than the forage for a Cavalry Division; but of course a horse can still go without proper forage whereas petrol supplies must be forthcoming as and when required. Still there is no question but that the supply of petrol is a desperate problem because of the enormous amount involved and of its vulnerability.

The total of ammunition required for a mechanized force cannot be compared with that needed by a man-power formation. Battles between armoured units may be fierce but they will certainly be short.

As for the rations of the men, I do not think these will cause trouble.

It therefore comes down to this—that petrol is the only supply problem, and I would ask the lecturer to enlarge on that subject. Is he going to send up lorries with bulk supplies or how does he propose to do it?

COLONEL CAMERON, in reply: As regards my comparison of a column of vehicles passing through Guildford, I was talking, mainly at least, of the mechanical vehicles as used on a line of communications replacing the railways. In that kind of situation mechanical vehicles might be made to travel at speed. The average speed on the nearest main road to me is now approaching nearly forty miles an hour. The kind of block which occurs in military traffic, familiar to all of us, occurs in places where the tactical situation causes trouble. I suggest you should put the matter in this way. You can calculate whether the modern motor vehicle can replace a railway as regards output along a road. Supposing it can, it means that your "railheads" could be placed anywhere you like on a road, relatively to the actual fighting. I imagine that any "Q" officer, given that privilege, would very soon clear up the traffic difficulties that now arise because he is tied down to the particular railheads that have to be used because there happens to be a railway station there. If he could place the railway stations so as to make the best use of the roads round about his area, he would find the situation enormously easier.

As regards the supply of petrol, obviously that subject is so great as to deserve separate treatment, and this I could not do at the moment. Suffice to say that it is a very complicated business; it has to be done partly by tank lorries, partly by trailers, and partly by petrol tins. I think it is quite clear that the trailers and the tank lorries would have to be worked in a double system so that there is one constantly present with the marching M.T. unit and another one being re-filled. Beyond that I do not think I can say more.

#### THE CHAIRMAN:

LIEUTENANT-GENERAL SIR W. HASTINGS ANDERSON, K.C.B., prefaced his summing up remarks by stating his regret that he had been unable to study the lecture before that very day. Secondly, he was embarrassed by the fact that his official position at the War Office necessitated his possessing knowledge of certain tendencies as to the manner in which attempts should be made to solve the very problems which Colonel Cameron had now expounded.

"Colonel Cameron," he continued, "had begun rather by tilting at the well-known diagram here exhibited. May I perhaps explain to you that, from the official point of view, there is really a twofold necessity for having such diagrams, which may not always be apparent. In the first place, when the Army is going to be instructed it always is anxious to have little diagrams, and I think the lecturer as an instructor will agree that in order to begin instruction in a new subject diagrams are extraordinarily useful, provided, of course, we are careful that the diagram is used as a help and not as a master. The second reason is that without some means of definitely illustrating our needs in the matter of organizations, it is not possible for the Army to obtain the agreement of the financial authorities to the establishments on which our war organization is based. After the South African War, I myself, in company with another Staff Captain, was employed in working out a diagram not quite as complicated as the one on the wall, which was based on the experiences of the South African War. On the strength of this it was possible to fix the establishments for our organization for the next war. I think it was Marshal Foch who said that we should organize for the next war and not for the last war, and it is a necessary assumption that in order to obtain sanction for new establishments out of the finance authorities we should be able to point to something based on experience. At the same time such diagrams do not imply that we who are responsible for the regulations still adhere to them down to minute detail.

The lecturer also laid rather a heavy hand on the tendency of Directorates to pile up institutions at the front. Now I am in entire agreement with him in wishing to get away from the one-string line of communication. But the difficulty with a mobile mechanical force is that there will be no front and no rear, and that it will be as liable to attack at the back as in front. That danger of large institutions along fixed lines of communication must, I think, be guarded against, firstly by the efficiency of our own air service—that is, the counter-offensive of the air; and, secondly, as Colonel Cameron said, by dispersion. On the other hand, the dispersion of administrative institutions and formations over wide areas does make the administration of a force in the field considerably harder. The remedy for that dispersion is to be found in the use of W/T to enable us to employ it for communication in place of the telephone or orderly.

The lecturer also appeared to be a little hard on the fighting man for allowing himself to be tied down by "the directors." I would here remind you that there may exist in the mind of the better-half of the household a knowledge of detailed administration of all household management which might reduce the proudest conqueror to comparative insignificance. At the same time I would add that possibly the fighting men are not always to blame, and that "the directors," as I think Colonel Cameron suggested, are possibly inclined to foretell disaster if their great requirements are not fulfilled to the letter. The difficulty is hard to meet for the simple reason that the directors may possess much detailed experience, while the commanders and staff often suffer severely from an absence of technical knowledge. That reinforces the point of the necessity of close co-operation between the administrative and the fighting units. And this is precisely what our mechanical forces are bringing about, that is, to effect a complete contact between administrative and fighting officers. This is inevitable, since without petrol no mechanical vehicle will move. In the old days a soldier might go on half rations for a commander whom he loved and respected; the horse would work without food until he dropped; unfortunately, the car stops unless petrol is forthcoming.

Then one word of caution with regard to roads and the question of entirely doing away with railways. General Davies has mentioned the point; so that

I will just emphasize the fact that we have to go warily in organizing the British Army. The war problems of Continental nations with land frontiers have been in the main definite and have been based on war in some well-known theatre, with established lines of railways, roads and other communications. With us it is different. Between the South African War and the Great War we organized a force with a clear prospect of a war on the Continent in alliance with Continental armies: before and since it has not been so. To-day, as in the past, we have one known factor, and that is that wherever we have to fight we fight overseas. Consequently, we have to organize our forces on the most probable of a series of possible theatres of war—and probably in the teeth of the fixed opinion of the nation that any employment of military forces is visionary. Therefore our difficulties are the greater because of our uncertainty as to the nature of the theatre of possible war. There are theatres where the avenues of approach to the scene of operations are forced into physical bottle-necks where possibly only one line of railway or one single road can go. There are roadless areas, too, where it may be necessary to consider very closely the respective advantages of making roads or making railways. We have to consider the question of the supply of labour, the nature of the soil, the road material, the gradients and very largely that question of bridges to which General Davies referred. Again, we have unfortunately to remember that every year the luxuries of the past become the necessities of the future soldier in a highly civilised nation, and that the bulk of the stores we have to carry always tends to go up in proportion to the number of men actually transported, quite apart from the reduction anticipated from the use of mechanical vehicles on the road. As we know, increase of bulk favours the railway in case of competition where the roads are not good or in a practically roadless country.

The lecturer's conclusion in regard to the necessity of looking forward and utilizing the brain power of the young administrative and fighting officers commands universal sympathy; we all know it. Our difficulty is not small. We cannot unfortunately jump ten or twenty years. We have to creep slowly through those ten or twenty years, and those who are at the head of affairs are responsible for making some progress in the right direction as the years drag on. We are not able to wait ten years and then suddenly awaken to find the new army growing under us. We have to do something every year, and we must go slow to be sure that we are building in the right direction, so that the young men who have the knowledge and the experience in regard to the new mechanical forces may find the way plain for them and made in the right direction. They must not find that we have been organizing an army which is not required. Accordingly, let us seek the closest possible connection between administration and fighting. Let us forget the old idea that one man did the fighting and the other was responsible for the administration. We cannot fight unless we can advance, and we cannot advance unless the administrative services are fully competent not only to supply our needs, but still more to bring them to us by whatever means are best to hand, whether by road or rail or any other form of communication."

The customary votes of thanks to the Lecturer and the Chairman were then put to the meeting and carried unanimously.

## THE BRITISH ARMY OF THE RHINE

### A RETROSPECT

By MAJOR E. E. GAWTHORN, O.B.E., D.C.M., R.E.

*"On 2nd April, 1919, at 12.00 hours, the Second Army under the command of General Sir H. C. O. Plumer, G.C.B., G.C.M.G., G.C.V.O., A.D.C., will become an independent 'Army of Occupation' directly under the War Office and will be known as the 'Army of the Rhine.'"*—(Army Order).

THE German frontier was crossed at Malmedy on 1st December, 1918, when Marshal Haig issued a Proclamation warning "all persons in this place that they must not imperil the safety of any officer or man in the service of His Britannic Majesty" under the penalty that persons responsible will "be punished with DEATH." He also promised protection to the inhabitants "so long as they conduct themselves in an obedient and peaceable manner."

Stern words: yet observers commented on the absence of arrogance as the Army moved forward to Düren; and, by the time it reached the outskirts of Cologne, the inhabitants dispelled their timorous doubts and behaved with dignity and self-control. Such emotions as bitterness, rancour and humiliation were not evident: the only display of feeling expressed itself in relief that the troops had come because the spirit of anarchy was brooding over the land. Hooligans and self-discharged soldiers had taken possession of the Rathaus and hoisted the red flag; and the Burgomaster preferred a special request to the British to hasten their arrival to protect those who wished to "conduct themselves in an obedient and peaceable manner."

Accordingly, at mid-day on Friday, 6th December, our troops entered Cologne and proceeded to the Hohenzollern Bridge, where a sentry of the 18th Hussars was posted with a chalk line separating him from the last sentry of the German rearguard. The formal entry, when the Rhine was crossed, commenced at 10.00 hours on 12th December; General Plumer took the salute; a band played "Rule Britannia," and

the troops commenced "One more river to cross." Three infantry divisions followed the cavalry into the perimeter; the 29th in the centre, the 9th (Scottish) wheeled left towards Solingen, and the 1st Canadians turned right towards Siegburg. The rest of the Second Army was disposed throughout the British Zone, extending back to Belgium, northward to Neuss, and southward to Mehlem. The Army then settled down to Christmas.

Apart from innumerable economic and administrative problems not directly concerning soldiers, it was necessary to improvise a separate Army of Occupation, as expeditiously as the adjustment of industry to peace conditions in England would allow, and a post-bellum army had to be formed for overseas and home defence. Patience became a cardinal virtue, and discipline had to be maintained at all costs. But the spirit of discontent rampant in Germany was highly infectious and an acute problem was how to occupy the troops while the administrative staff solved their problems. They could not be sent home: Germany was still an "enemy," and might not accept the coming peace terms.

Consequently every conceivable agency was pressed into service to amuse and provide instructional or recreational facilities. I have seen men smile at a notice board adorning a lamp-post in Cologne directing soldiers "to the Army Art School." Nevertheless, everything, including the paint brush, was necessary to maintain good *morale*; and the success achieved in a cosmopolitan city, which commenced to attract the worst elements of the scum of Europe, is largely due to the untiring efforts of members of those military, religious and social organizations who did work of national importance. Exuberance of spirits gained ascendancy over good sense in a few instances but the comic element predominated; as when the inhabitants of Cologne found a prince's statue more hideous than usual with a coat of red paint, or when the Canadian soldier shot the spike off the helmet of an Emperor's statue at Bonn. The Dominion Contingents went to their distant homes; regular units were withdrawn to form cadres for the post-bellum army; and sixty-nine "Young Soldiers' Battalions" came out to replace them.

When the Army of Occupation became an independent force it had an authorised strength of approximately 11,000 officers and 264,000 men, formed into five Army Corps and a Cavalry Division, consisting entirely of war time units. The Infantry, organized on a territorial basis from the cadres of some of our famous Divisions, was disposed as follows:—

IInd Army Corps (Leverkusen) occupied the left of the Bridge-head with the Lowland (9th) Division and Southern (29th) Division.

IVth Army Corps (Düren) held the rear area (North) with the Light (2nd) Division, Highland (62nd) Division and the Cavalry Division.

VIth Army Corps (Lindenthal) held Cologne with the Northern (3rd) Division and London (41st) Division.

IXth Army Corps (Euskirchen) held the rear area (South) with the Western (1st) Division and Midland (6th) Division.

Xth Army Corps (Bonn) held the right of the Bridgehead with the Lancashire (32nd) Division and Eastern (34th) Division.

Thus the Army stood fast while the rulers of many nations sat at Versailles to make peace. One morning it was rumoured the Germans would refuse to sign, preparations were made for a rapid advance towards Berlin, and "J" Day was whispered in the gossip shops. In twenty-four hours our advance guards were to be "half-way to Hanover." But Peace was signed. The Military Governor disappeared and the first Army of Occupation commenced to go home.

The IVth Army Corps did a wonderful thing before they went ; they staged an event which will live in the minds of the relatively few who saw it. They marched up the Roer Valley to that romantic region of castle crowned hills by Nideggen, and there gave the most wonderful torchlight tattoo it is possible to conceive. Every event in my life fades before that marvellous picture when all the dreadful instruments of war were used to provide a vision of beauty before being discarded. Searchlights shone on ruined castles which seemed to hang suspended in mid air owing to the gloom below ; Royal Engineers made antediluvian animals which came out of the forests and devoured sparsely clad sappers with flint weapons ; cavalry gave inimitable musical rides ; and the regiments of infantry trickled down from the tree clad hills as rivulets of light and formed themselves into regimental crests on the greensward where the river reflected the footlights. Useless star shells and rockets were expended in a grand finale ; and, as the moon rose over the hills, we sang " Abide with me." Old comrades gripped hands and shed tears in the gloaming ; next morning they commenced to go.

During the Armistice period relations with the population had been " distant " : fraternization was forbidden and places of amusement were generally " Out of bounds." Cologne presented a curious aspect : soap and rubber were scarce, messenger boys rode bicycles with spiral springs in place of tyres, and ladies' garments were made of paper. At first civilians had to be indoors by 7.0 p.m. and at night shadows would furtively dart from door to door. Once a plot was discovered to murder British officers ; we were forbidden to walk the streets alone at night and paraded in mess to see each other safely home to bed. Cologne was

packed with soldiers ; every postman, railway servant and policeman had to salute British officers. At first male civilians had to doff their hats ; but that was soon discontinued in the city. Later, the formality of saluting was restricted to uniformed officials bearing arms.

#### APPLYING THE PEACE TREATY.

The great army "faded away" leaving behind a force, formed round the cadre of the London Division, consisting of approximately 12,000 officers and men serving on "Duration of War" engagements. But other troops were also to be retained. The Peace Treaty had decided that various parts of Germany must hold plebiscites to determine their future nationality, and troops were sent to each area to prevent interference with the free choice of the people. These, and the Military Commissions to enforce the disarmament clauses of the Peace Treaty, drew their sustenance from Cologne.

The chief plebiscite area, so far as we were concerned, was East Prussia. An "Independent" Division was formed to police the area, but the move was cancelled and a smaller force, with troops sent out from England, went there instead. Other British troops were sent to Flensburg. Later, a detachment was sent from the Upper Silesian Force to maintain order during a plebiscite at Oldenburg, in a region south of Vienna known as Burgenland.

The Rhine Garrison, thus reduced to a shadow of its former self, settled down to the routine of garrison life. General Sir William Robertson, G.C.B., K.C.V.O., relieved General Plumer on 22nd April, 1919, and remained until succeeded by Lieutenant-General Sir T. L. N. Morland, K.C.B., on 3rd March, 1920.

But what the Army lacked in quantity was soon made up in quality. Shortly after the ratification of Peace, authority was given for wives and families to join their husbands in Rhineland. We had had W.R.E.N.S., and W.R.A.F.S., and W.A.A.C.S., besides Nursing Sisters and voluntary workers, to remind us how charming above all others our own country-women are. And so we rejoiced when our wives came out.

When they arrived there was no disguising the fact. They each wore an armband, stamped by the Permit Officer, to ensure adequate police protection. They soon showed us how to shop. German women eyed them up and down and took the measure of their clothes. Before their arrival a khaki uniform was a free pass on all vehicles and we went where we willed. Soon these privileges were curtailed and we had to pay or walk. Duty passes then came into their own, not a few counterfeits coming into circulation. The tram conductors could not read English and any piece of pasteboard might do duty. I once saw

a soldier's good conduct pass punched with holes indicating it had vouched for about thirty free tram rides. The fun did not last long.

We were settling down to home life when the alarm sounded. Germany displayed dilatoriness in passing legislation to enforce the Peace Treaty. She was given fifteen days to comply or the occupation would be extended to other places. The British were allotted Elberfeld and our Allies Dusseldorf and Frankfurt. But peaceful measures prevailed and we turned again to domestic affairs.

Two families of one nationality are sometimes more than enough in one house but imagine the possibilities of a German and an English family sharing one kitchen, one bathroom, and one set of household utensils! Some were fortunate; the majority were tolerably comfortable; the few suffered purgatory, and the Military Police Court had to assist. Once I had a billet where the hausfrau counted our heads—three—and solemnly issued us with three plates, knives, forks and spoons; our maids presumably could use their fingers. Later separate colonies of villas were built where we could live with our own people.

In March, 1920, units of the new Regular Army replaced the last battalions of the War Time Army.

#### UPPER SILESIA.

The Silesian plebiscite was to settle something more than a sentimental question of nationality; solid material advantage was to be gained by the winners—coal. The quarrel was between German Capital and Polish Labour; the plebiscite would settle the burning question whether the coal should pass down the Oder to feed the furnaces of Germany, or become the basis of prosperity for the new Republic of Poland. An Allied Commission was appointed, but apprehensive Capital saw itself hopelessly out-voted by poverty-stricken Labour, and every excuse was made to put off the evil day of decision.

Early in 1921, four battalions were sent to maintain order but trouble continued and the situation became acute. Finally, the Allied Commission was unable to assert authority. On 5th May, 1921, the Poles under Korfanty and German Irregulars took the field against each other. Further assistance was sent, and Allied detachments had to separate the disputants and conduct what was referred to as a "Comic Opera Campaign." It certainly possessed comic characteristics. The troops had to sandwich themselves between opposing forces and "gently" push them apart; and, as they were arrayed at right angles to our line of approach, communications passed through "enemy" lines. I remember performing this peaceful penetration one day when a German sentry raised his rifle but dropped it on recognising my nationality. He said,

in corrupt English: "Me vos vor prisoner in England and you give us good brot; you pass on."

Those early days in Silesia were full of excitement; every man's hand was against that of his neighbour. Even in Oppeln one ventured out alone at considerable peril. Armed men of many nationalities lurked in quiet places where the unwary might receive a knock-out blow with a "Gummi-Knüppel"—a flexible baton of hard rubber. Stray shots were heard at night; next morning the body of a Pole or a German might be pulled out of the Oder.

In this vortex of contending factions our men soon produced order—in the usual way. An incident seen from my hotel window at Oppeln aptly describes that way. Two soldiers—a Frenchman and a man from Durham—had mixed drinks and quarrelled.

"Come outside and put 'em up," said Dick from Durham.

"Mais oui, certainement," replied Georges.

On the pavement they fought; the Frenchman was floored; and, while Dick counted him out, a civilian offered a murderous looking knife with which to finish the job. He received one under the chin for his pains; Dick and Georges went back arm-in-arm to drink more "entente cordiale"; and the civilian began to understand—our usual way.

When order was restored the troops settled down to garrison duties. Headquarters was at Gross Strēhlitz and strong detachments were stationed at Oppeln, Tarnowitz, Lublinitz and Beuthen.

During the winter of 1921-22 the men in Silesia had a dreary time, while the families in Cologne were impatient for their return. A few adventurous wives visited their men folk, but conditions were not favourable and visits were forbidden. A joke is told of a senior Officer who said:

"Morning. Anything doing?"

"Yes, Sir. Two Officers' wives have turned up without permission."

"That's awkward! Are they good looking?"

"Very, Sir."

"Well, I suppose we must take them out to dinner. By the way, who are they?"

"One's your wife, and the other's mine, Sir."

"What! Send 'em back on the next train, under escort."

After that, a few wives were allowed to visit the area, subject to stringent conditions.

On 26th March, 1922, General Morland was succeeded by Lieutenant-General Sir A. J. Godley, K.C.B., K.C.M.G.

#### ADMINISTRATIVE PROBLEMS.

When four nations with divergent views occupy a highly civilised foreign country, big questions of political and economic policy arise which call for great administrative ability in application, especially when there are no precedents based on modern experience while the "Usages of War on Land" state "the legislative, executive and administrative functions of the national government cease on occupation."

It may be difficult to maintain an effective blockade between two parts of a country without disturbing its economic unity: nevertheless, it had to be done. The world was weary; the Allies had their own acute domestic problems to handle; Germany was short of food and raw materials; her people were on the verge of revolution; expenditure exceeded revenue in all departments of State activity; and the prospect of administering Rhineland with any hope of reaping profit from the revenue might well have been regarded as hopeless. Why assume the burden? On the other hand, it is pertinent to ask whether subsequent events would have occurred if the Allies had taken over the district as a guarantee for payment? Would the Ruhr trouble have arisen? Would the collapse of Germany's finances have taken place?

Article 432 of the Peace Treaty provided for a Rhineland Agreement to regulate the occupation. It appointed a Civil High Commission as the Supreme Allied Authority, whose Ordinances had the force of law; it gave the Allied Forces the usual rights of requisition, to occupy barracks and military establishments, and to have them maintained, heated and lighted; it also gave them control and rights of user over all means of communication.

From an administrative point of view two important factors emerge from the Rhineland Agreement:—

- (a) An independent civil authority came in as arbiter between the Allied Military and the German Authorities.
- (b) The Germans were required to provide specified services to the satisfaction of the Allies who were not directly concerned with the question of cost or how those services were provided.

The second factor was the more important. The Army had no direct interest in question of cost. It should have been voted a fixed amount and given control of expenditure. But Germany wished otherwise: "We will provide; you need not worry." Consequently,

an army of officials found jobs to supply our wants ; the cost was not our concern. The Germans might build colonies of quarters and furnish them with everything from settees to salad bowls to save quartering on the inhabitants. What mattered if nine people worried my household to replace a broken window ? They were all paid by Germany. Thus a mighty bill was made up in Berlin, and Germany "groaned" under the burden of occupation which gave employment to hundreds of officials.

#### CHAOS AND CONFUSION.

Meanwhile Germany was running down hill and pursuing a policy of non-fulfilment. She was behind in reparation payments and deliveries in kind, and the London Ultimatum was issued without result. Accordingly, military and economic sanctions were imposed, Allied forces occupied Dusseldorf, Duisburg and Ruhrort on 8th March, 1921, the British troops consisting of the 14th Hussars and some Tanks supported by Naval launches on the Rhine. The economic sanctions contemplated a customs levy on goods entering and leaving Rhineland and a small Customs Board arrived to perform an impossible task.

The situation was complicated by events at home. In April, 1921, half the Rhine Army was doing police duty in England during the Coal Strike, the world being little the wiser. They returned to preserve order and make Rhineland the only safe spot in a country seething with discontent and disorder. Spartacists were active and strikes were prevalent throughout unoccupied Germany. In Rhineland they were forbidden, though food riots occurred in Cologne, where shop fronts were smashed as a protest against profiteers ; so a tank was placed in front of the Dom to restrain turbulent elements of the population. Across the frontier, at Remscheid, a regular battle occurred and hundreds of rioters escaped into our territory where they were interned. In Solingen British troops had to intervene to maintain order. The whole year was one of turmoil and the situation was difficult to a degree.

In January, 1923, however, internal dissension subsided in the face of the "invader." Franco-Belgian forces entered the Ruhr and the German Government issued a Decree pronouncing such action :—

"A serious violation of International Law and the Treaty of Versailles. Orders and Ordinances issued to German officials in consequence of this action are illegal and are not to be obeyed. . . . But those general orders are not to be carried out strictly within the British Occupied Area. It rather serves the intention of the German Government that the wishes of the British Authorities are met as far as possible."

Workmen downed tools and received out of work pay from the Government, while the Railways and Postal Services ceased to function, except in the area around Cologne, which was like an isolated island in a silent sea. For France there was no turning back: an army of engine drivers, officials and workmen invaded Rhineland and the Ruhr.

Concurrent with these events was the collapse of German currency. In January, 1921, a mark was worth a penny; a year later they were four a penny; and, in January, 1923, we could still count them at two hundred for a penny. On 22nd November of that year, however, the official rate of exchange was 200,000,000,000 marks for one English penny, or 50 billions to the pound sterling. In January, 1924, the mark recovered to 20 billions and was stabilised at that rate. Later they cancelled all the noughts and called 1 billion—1 reichsmark. It was changed at parity with the dollar, so the pound sterling was worth 18/4. Only those who lived through the period can appreciate the significance of these figures. Mounted police had to control queues at banks and a lorry was required to collect the money to pay a battalion. We are all supposed to have made our fortunes, but I have not met a man who did so.

The troops were paid in the currency of the country at its current sterling equivalent. Before they could spend it the value had diminished to vanishing point. I cashed a cheque at the rate obtaining at mid-day; when the shops opened at 3.0 p.m. its value had diminished so much that the equivalent of 13/4 was paid for a pound of butter. Thus the troops had to spend their money at once otherwise it disappeared. They could make allotment to their parents at home or buy Postal Orders and Savings Certificates. In these directions, however, wide fields were opened for gambling with public funds, and many were penalised by restrictions to protect the public from the unscrupulous.

#### THE SPIRIT OF LOCARNO.

In execution of engagements undertaken in London on 16th August, 1924, the Franco-Belgian Forces evacuated Dortmund and the zone which hemmed in the British Area on the 22nd October, 1924. Previously, on 16th June, 1924, General Godley had handed over to Lieutenant-General Sir J. P. Du Cane, K.C.B.

The London Agreement on 30th August, 1924, giving effect to the Dawes Report, changed the system for providing services under the Rhineland Agreement; in future the total sum to be paid by Germany for all occupation costs was to be fixed. Henceforth administration took on a different aspect; the Allies had a direct interest in obtaining

value for money. It was quite impossible to devise machinery to control expenditure with effect from the new arrangement coming into force. We spent weary weeks criticising and compelling German officials to mend their ways and to realize that accounts in future must show some relation to the value of services rendered.

Finally, claims covering the intervening period were settled by a "forfait," while a committee of experts sat at Paris under a neutral chairman to frame Regulations to settle the procedure for the assessment of contributions and to devise machinery for the supervision of all payments. This document, known as "The Patijn Code," came into force on 31st August, 1925. A few days previously the Franco-Belgian forces evacuated the whole of the Ruhr Valley, including the "Sanctions" zone of 1921, and the Allies were back in the area originally occupied at the end of 1918. Germany was rehabilitated; the road to Locarno was open where Germany tried to secure the evacuation of Cologne, but the Allies deprecated undue haste.

#### TRAINING AND MANŒUVRES.

While the stern realities of war were fresh in men's minds, the troops were busy policing Europe. There was little occasion for manœuvres, though musketry occupied the time of battalions and, in 1923, opportunity was found for Brigade Training.

In 1924, however, the British Rhine Army carried out "Mobile Warfare" in the vicinity of Blankenheim. The manœuvre was very successful and particularly useful as a means to enable administrative services to test their post-war organization. An Army of Occupation is fortunately placed during manœuvres inasmuch as the troops can be billeted in villages and obtain protection during inclement weather.

In 1925 and succeeding years more ambitious programmes were carried out. Having arrived at the end of real crises, imaginary ones occurred to enable officers and men to practice their profession.

#### EVACUATION OF COLOGNE.

At the end of October, 1925, orders were received to prepare to leave Cologne and proceed to Wiesbaden. Every possible step was taken to enable the move to be carried out smoothly. We were told it would commence on 1st February, 1926, and end before the financial year. Political considerations hastened the move which was completed before 1st February, with the result the troops had to carry on from one time of stress to another during a period of foul weather.

We packed our belongings in a foot of snow, and lorries had to turn back because the Rhine had risen and flooded the roads along its banks. The contract was kept; when the rear party of the 2nd Bn. K.S.L.I. saluted the flag for the last time at Cologne a huge crowd of Germans paid a dignified tribute to men who had tried to "play the game."

When we look back on our seven years in Cologne, we can recall many things—grave, gay, minute and mighty. Seven days stand out in my mind when I stood before the Dom in silence To Remember. Had we kept faith? As each succeeding year came round the number of German heads which bowed with ours bore witness in the affirmative.

#### WIESBADEN.

Four years in Wiesbaden and nothing exciting to write about:—the finest tribute one can pay to the wisdom and tact of those who rule and those who obey.

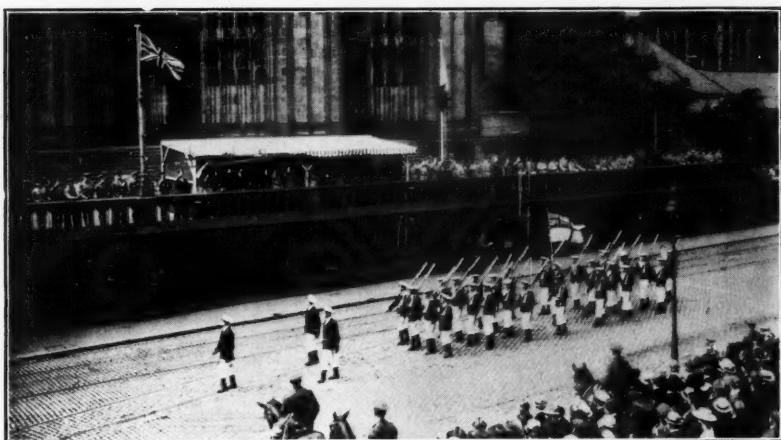
Yet none can say the time has been ill-spent. In their quiet corners at Bingen, Biebrich, Bad Schwalbach and Königstein, besides Wiesbaden, British battalions have worked like their comrades at any other station. They have gone into camp at Sonnenberg and Tier Park while the snow was still white on the hills, and they have done the whole course, ending with Brigade and Divisional Training, until autumn storms have driven them back to quarters and furlough. Their work has been enlivened by sport, amusement, and the round of social functions normal to any garrison. They have lived in neighbourly intercourse with their Allies, have fought them in friendly contest in athletics and on the race course, and waged "war" with them on manoeuvres.

Standing Orders have provided the maximum liberty to the individual consistent with the peculiar situation. Officers, necessarily, have had to appear in uniform more than their colleagues at other stations, mess dress being "de rigueur" at the Opera and other public functions. The N.C.O's and men have mingled more freely with the civil population, but there have been surprisingly few marriages with German women. In the early days, when a man's Commanding Officer had to officiate at the marriage ceremony, they were relatively more frequent than latterly when the men were made more responsible for the prescribed formalities.

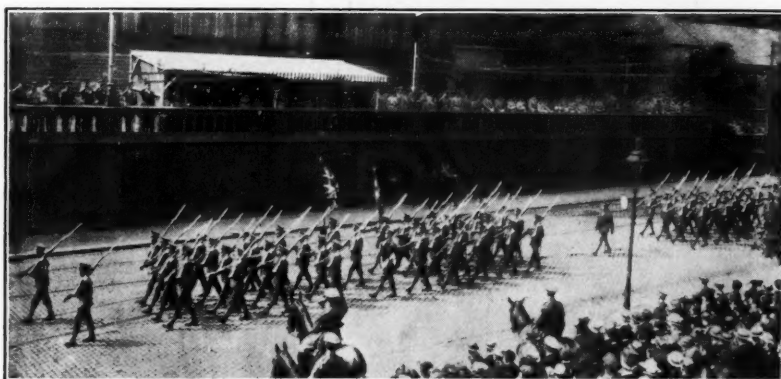
Finally, let a German say how the troops have conducted themselves before the cosmopolitan crowd which visits German Spas:—

"Slowly those khaki men . . . have made a place for themselves in our hearts, and perhaps they, too, will carry on

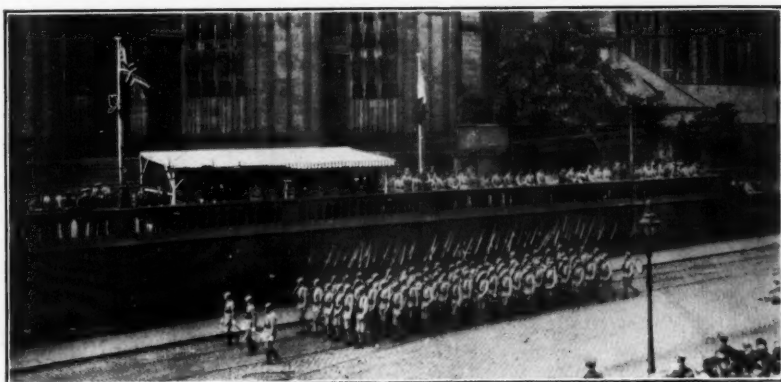




THE ROYAL NAVY

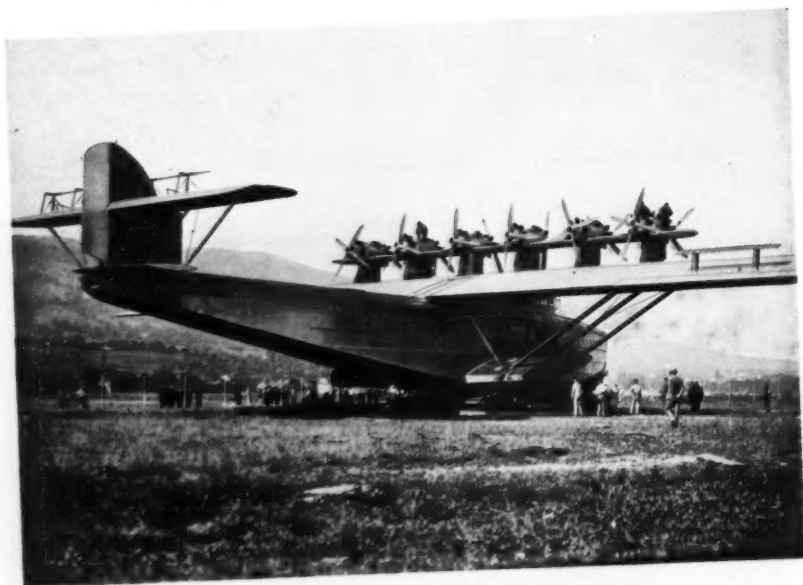


THE BRITISH ARMY



THE FRENCH ARMY

THE ARMY OF OCCUPATION ON THE RHINE  
H.M. THE KING'S BIRTHDAY PARADE, COLOGNE, 1924



THE DORNIER Do.X FLYING BOAT.

## PROGRESS IN CIVIL AVIATION

By AIR VICE-MARSHAL SIR SEFTON BRANCKER, K.C.B., A.F.C.

On Wednesday, 9th October, 1929, at 3 p.m.

SIR HERBERT HAMBLING, Bart., D.L., J.P., in the Chair.

THE CHAIRMAN introduced the Lecturer.

### LECTURE.

**A**BOUT two years ago I had the honour of addressing this Institution on the subject of "Air Routes"<sup>1</sup>; so to-day, in speaking of "Progress in Civil Aviation," I am going to date that progress from two years ago.

"Civil Aviation" is an ambitious title, and, in the time available, I must confine myself to air transport, to the neglect of other important activities such as air survey, fire-fighting, touring, crop-dusting, etc.

There has been a vast increase in flying all over the world during these past two years. Take, for example, the scheduled regular services, i.e., those flying on a fixed time table. In 1927 there were 35,500 miles of organized air routes in Europe, that is, routes provided with emergency landing grounds, lights, wireless, meteorological reporting, and customs facilities where necessary. In 1929 this figure had risen to 60,900 miles in Europe, which means that it had almost doubled itself in two years. In 1927, 15,500,000 miles were flown on regular air services; in 1928 the mileage was 18,580,000. Taking the figures for the whole world, in 1927 there were 54,700 miles of organized air routes, and 22,887,000 miles were flown on scheduled services. In 1929 the mileage of organized air routes has gone up to 122,600. This year the mileage flown may rise to somewhere about 55 millions. This big increase in the world's figures is largely due to the sudden development of aviation in the United States.

In Europe the following countries have national air transport companies: Great Britain, France, Germany, Italy, Czecho-Slovakia, Yugoslavia, Hungary, Austria, Poland, Holland, Belgium, Spain, Denmark, Sweden and Russia. In practically every case air transport is being subsidised by Government. The United States, however, are not subsidising it except in one case; but they are giving very large sums by means of postal contracts.

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<sup>1</sup> "Commercial Air Routes," published in the JOURNAL of February, 1928.

## FOREIGN AVIATION.

## FRANCE.

Immediately after the War, France, with her usual imagination, decided on a bold and far-seeing policy that has been followed unflinchingly ever since. The general idea was quick communication with her overseas possessions, and the furtherance of French influence in various parts of Europe and America. France is developing four main lines:—(1) through Central Europe to Constantinople; (2) through Southern Europe to Syria and the Far East—the line goes from Paris to Marseilles, then through Italy and Greece to Beyrout, and from there to Bagdad; this service has been established, and the ambition is to extend it to French Cochin China; (3) the route via Spain to West Africa and so to South America; and (4) the route via Spain to Algeria and thence via the Sahara and the Congo to Madagascar. In addition, they have local European services, to Berlin, Madrid, London and Copenhagen.

The most remarkable French effort is the South American service, which runs via the East coast of Spain, with a daily service as far as Casablanca and a weekly service from there onwards. From Cape Verde Islands the mails are carried by ship to South America, where, on arrival, they are again conveyed by a French air service on to Rio and Buenos Aires, and then across the Andes to Santiago. This South American route covers a little less than 6,000 miles by air, and about 1,900 by sea.

By 1931 the French hope to have developed big flying boats capable of crossing the sea from Cape Verde Islands to the South American continent, and then the whole of the 7,900 miles will be done by air. The average time from Paris to Buenos Aires has been nine days on the outward journey and ten days on the inward.

France is spending much money on her air services. In 1929-30 the subsidies amount to £1,400,000; in next year's budget they are put down as £1,680,000; in addition the French Colonies also assist considerably the lines crossing their particular countries.

The French civil aviation authorities are very broad-minded and preach the doctrine of freedom of the air. They are quite prepared to co-operate with other nations. For example, they have definitely asked us to carry their Chinese mail from Bagdad across India.

As regards aircraft, the French are straining every nerve to bring their commercial machines to a very high standard. For instance, Blériot has a big two-float machine, which is being constructed for the crossing of the South Atlantic. Generally speaking, French commercial aircraft are on the small side and have a considerable amount of wood

and fabric in their construction. But the Government realise that their progress in design has not been as rapid as it ought to have been, while their operating companies have actually purchased foreign machines—the "Calcutta" from us and Fokkers from the Dutch.

#### GERMANY.

Germany was for long in a peculiar position. By the Treaty of Versailles she was prohibited from keeping up a military air force or manufacturing military aircraft. Consequently she concentrated on civil aviation, but even in this respect she was, at first, hindered by the effect of the Nine Rules which set out to define a military aircraft—but in practice prevented the construction of really efficient commercial aircraft. In 1926 these Nine Rules were cancelled, and Germany was allowed complete freedom in design, but of course was still prohibited from constructing military aircraft. Up to that time she undertook an intensive development of her internal air lines; she also established factories outside Germany, where the Nine Rules could be avoided; such were the Dornier factories in Switzerland and Italy, the Rohrbach in Denmark and Junkers in Sweden. The Junker Company have also established air transport lines in Persia, Spain, and in South America (Colombia); they have sold their aircraft to many foreign operating companies. The Germans spent a great deal of money on civil aviation and thereby gained considerable practical success, though they have not made any money out of it.

In 1926 the German Government gave a monopoly of subsidies to one company, the Lufthansa—rather as we have done in the case of Imperial Airways. That company only started serious operations outside Germany in 1926 at which date the Nine Rule restrictions were removed. Since then they have extended to Barcelona, where they connect up with Madrid; their intention is to connect up with South America. They also intend to cross from Moscow across Siberia to Peking and Japan, as soon as they can surmount diplomatic difficulties with the Soviet Government. The Germans are also strong advocates of night flying. It is possible to go from Berlin to Königsberg by night, and arrive in Moscow the next afternoon. There is also a night service from Berlin to Essen, which comes on to England in the early morning. The Lufthansa has signified its intention of developing a nightly service between Berlin and London next year.

In 1928 Germany flew 6,750,000 miles. She claims the same length of organized air routes as France—16,000 miles. During the last few months there has been considerable financial stringency in Germany, and the subsidy for 1929-30 was reduced to £650,000. This resulted in economies, such as the cutting down of personnel. But since then the

air services have had authority from the Government to take out loans, and one of these loans is to be devoted to ex-European enterprise. I do not think German aviation will suffer any serious setback.

German figures for safety are steadily improving. In 1926 they carried 52,000 passengers, of whom four were killed and about twenty injured. In 1928 they carried 111,000 passengers, and again four were killed, and something like twenty injured, so that although they have carried double the number of passengers, the number of casualties is just the same.

Germany generally is against the policy of freedom of the air. Her policy is to demand some form of *quid pro quo* from every foreign line that crosses German territory. Her general tendency is towards big aircraft and monoplanes. The latest Junker is of 1,250 h.p., carrying only eleven passengers. These machines cruise at about 100 miles per hour, and are most comfortable, but the paying load is small for the h.p. employed. They are running on the non-stop services between Berlin and Vienna, and Berlin and Amsterdam. A new and striking example of progress in aircraft construction is the Dornier DoX.<sup>1</sup> This huge flying boat is fitted with twelve 500 h.p. engines. Her full approved airworthy weight is 52 tons. When I flew in her, she carried a total weight of 40 tons, and, getting off the water in 30 seconds, cruised at about 112 miles an hour. The manoeuvring on the water was excellent. She was most comfortable; there was no vibration and the passenger cabins were remarkably silent. From the photographs it will be seen that there are three decks; the upper deck for captain, crew, engine room, etc., the middle deck for the passengers and the lower for fuel and baggage. When flying, you get the impression that you are on board a ship. She is still undergoing tests. I believe that it is proposed eventually to put her on the South American service. Two of these machines have been sold to the Italians who also have aspirations in the direction of a South American service.

The Germans are developing a heavy oil engine, running now at 700 h.p., which I believe will be a noteworthy feature in future developments.

#### UNITED STATES.

The States have made wonderful progress within the last two years. They enjoy ideal flying conditions; huge distances within their own frontiers—hence no international difficulties or delays; a fairly definite climate, which facilitates meteorological forecasting. Then, again,

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<sup>1</sup> See plate facing p. 771.

wealthy cities are scattered over the whole area, and there is a very big and enterprising population only too glad to seize on anything new.

There are some remarkable air lines in America. One of these runs from New York to San Francisco, a distance of 2,700 miles, which is covered in thirty-six hours. There is also an interesting combination of railway and air travel in the route from New York across to Los Angeles. This distance of 3,000 miles is covered in forty-eight hours, involving two days in the air and two nights in the train. There is only one case of which I know in which the American Government is giving a direct subsidy, and that is to a service running through Central America and down the West coast of South America, to Peru and Chile. All the other services, however, have fairly generous mail contracts, on which a good many of the companies are making money.

The increase of flying is remarkable. During 1928 they had a scheduled mileage of 7,382,000 miles, and the mileage actually flown was 7,035,000 miles. The revenue from postal contracts alone was £1,500,000. The American Post Office is a spending department. It spends a good many million pounds a year in giving service to the public, and I doubt whether the Post Office officials know whether they are gaining or losing from their contracts with air transport. For some time the Post Office demanded a surcharge of 10 cents per letter carried by air; this was lately reduced to 5 cents on the plea that on the 10 cents surcharge they were making profits. Clearly their air mails receive good support. During 1928 the pilots' licences (commercial licences) applied for numbered 8,375, and the licences issued, 4,887. The number of aircraft licences applied for was 6,100, and the licences issued 3,165. The airways actually lighted amounted in 1926, to 2,041 miles; in 1928, to 6,988. The airways unlighted measured in 1926, 6,363 miles, and in 1928, 9,679.

The Government is also assisting the development of air transport by providing adequate ground organization without any sort of financial return. In this respect our own expenditure is infinitesimal.

The figures for accidents in America are interesting. Usually it is said that American aviation is unsafe. The fact is that up to three years ago there were no safety regulations, but since then regulations of this kind have been enforced and are rapidly improving matters. In 1928, in scheduled flying, when 11,000,000 miles were flown, nine pilots were killed, seven severely injured, thirteen passengers were killed and two severely injured. Such figures are not excessive, considering the recent date of the safeguards. I lay stress on these various aspects of American aviation because they seem to offer excellent examples for the British Empire, where we are faced with greater distances than is the case in

the United States, and should have greater incentives to speed up our Imperial communications.

For a long time the Americans were much behind Europe in the development of commercial aircraft, but they are now catching up. One of the latest types of American aeroplanes is the Ford all-metal production, a tri-motored air transport monoplane. It is a very efficient machine, a cross between the Fokker and the Junker, and Mr. Ford is making four or five of these every week. Another example is the Sikorski flying boat, a twin-engined amphibian, which is being used on the service from Florida to the South. American constructors realise, however, that they have dropped behind in commercial design and are seeking to learn from their European contemporaries. They have come to an agreement with certain firms in this country for the construction of British aircraft and engines in America.

#### THE REST OF EUROPE.

In Europe we find everywhere regularity and safety of a remarkably high order. The chief trouble of European air transport is finance, and the inability to charge an economic rate and yet obtain sufficient traffic. The general European policy, moreover, is to claim the sovereignty of the air and thereby obstruct, to some extent, the passage of foreign aircraft over national territory. Unfortunately, subsidies seem to be an absolute necessity, and this hampers progress all round, as I shall show presently.

#### THE BRITISH EMPIRE.

##### AUSTRALIA.

I must now turn to our own Dominions. Australia led the British Empire in the development of air transport. The Commonwealth has made steady progress during the last eight years. In 1928 there were 3,507 miles of organized air route; in 1929 the figure had gone up to 5,900, and the programme for 1930 carries it to 8,000. The Australians have a wonderful record for safety and reliability. Their trouble is that a small population does not justify daily services, and most of the services can only run weekly. Australian air transport covered 421,900 miles during 1928. The subsidies only averaged about £75,000 a year during 1926, 1927 and 1928; for 1929 they will be something over £80,000.

The Australians are particularly fine airmen; and Australia is using all-British aircraft.

##### CANADA.

Canada is only just beginning to take to air transport, having devoted most of her energies to air survey, forest fire patrol, and so on. She has

now got something like 3,400 miles of organized air route, and has been encouraged, of course, to connect up with the big air transport system of the United States. She has regular services, daily, from Montreal to Toronto and Montreal to Albany; services in winter from Quebec to Seven Islands and Anticosti; and in summer from Ottawa via Montreal to Rimouski. She has also developed a service from Winnipeg to Edmonton. Already there are twenty-five recognised air transport companies in Canada who are taking on every sort of transport business, including regular services, mail contracts and taxi work. Canada does not give subsidies, but is generous in her postal contracts. I am sorry to add,—and this is only to be expected from her close proximity to the United States,—that she is using American aircraft to a great extent. Some of these are being built in Canada.

The rest of the Empire has done very little up to date. However, negotiations are taking place in British India. South Africa and other Colonies on the East of that Continent are contributing to the proposed Cape to Cairo service, and Singapore is ready to help any serious effort to establish communication with India and Australia.

#### IMPERIAL ACTIVITIES.

I come now to the activities of the Imperial Government. Our cross-Channel services have been working since 1919. I have always looked upon them as a large scale experiment. They have gone through many vicissitudes. As we began to develop our Empire communications, these Channel services have become less and less important from the national point of view; but, of course, since there is money in them, they are worth keeping going. But as far as the Government is concerned, our real objective is the establishment of Imperial communications.

Our figures for safety make a wonderful record. During the years 1925 to 1928 no accident occurred at all, on Imperial Airways though the mileage per year varied from 900,000 to over 1,000,000. Then we had that unfortunate accident this summer which has rather spoiled our record. Nevertheless, it is a marvellous record considering the great difficulties of climate we have to overcome. As for regularity, the flights cancelled, delayed, or interrupted for mechanical reasons in 1925 amounted to about 11 per cent., in 1928 they were a shade above 4 per cent. The progress in this respect has been absolutely steady, and I can see no reason why we should not reach a point where the air services will be as regular as those of trains or ships. In fact, British aircraft already operate more regularly than a good many ships.

A general indication of the increase in traffic is gained from the following figures. In 1927, Imperial Airways flew over 760,000 miles;

in 1928 over 1,000,000 ; in 1927 they carried 18,800 passengers, in 1928 they carried 27,600.

Now I come to British aircraft. A fine type of modern aircraft is the "Calcutta." She is employed by Imperial Airways for the Mediterranean services, and I think we can safely say that she is the best flying boat now in service. She carries fourteen passengers and cruises at nearly 100 miles an hour. She is a wonderful machine for alighting and for getting off under difficult conditions. Then there is the latest "Avro," an adaptation of the Fokker, now being manufactured in England. She carries eight passengers, and has engines of about 600 h.p.

Another successful type is the new Handley Page aircraft, eight of which have been ordered by Imperial Airways. They carry forty passengers, and have four engines, totalling about 2,000 h.p. This is perhaps the most ambitious aircraft yet constructed. The first of these, it is hoped, will be in the air some time next year.

#### EXTENSIONS TO THE FAR EAST.

In 1927 we had just started the section between Cairo and Basra, and we were having considerable diplomatic trouble with Persia. At that time we were doing nothing in the Mediterranean. We have improved things considerably since then. You are all aware of the inauguration of the Imperial Airways weekly service to India. The traveller goes to Basle by air ; then by night train from Basle to Genoa ; from Genoa to Alexandria by flying boat ; and then on to Karachi by air. This service has been a very great success, and has been very regular. The traffic is going up steadily. The load of mails out has steadily risen from 320 lbs. to 750 lbs., and the load of mails in from 500 lbs. to 750 lbs. ; this last figure is rather disappointing, as the service saves six days in the case of most parts of India. We have had only one serious accident, due to the defective ground organization in Persia. Beyond that, there has been almost a 100 per cent. regularity right away through, from London to Karachi ; a very remarkable performance.<sup>1</sup>

From Karachi we have to cross India. At present we are negotiating with the Indian Government for a scheme of action, as this is an Indian responsibility, and the Home Government cannot pay for that particular section. The section from Rangoon to Singapore is an Imperial responsibility and that from Singapore to Australia, as I have indicated already, is one in which the Australians are taking an interest. Altogether I cannot see why we should not complete the through service to Australia by some time in 1931 when a number of financial and other difficulties are overcome. We are already doing the distance from London to Karachi in just over seven days, and, very soon this is likely to become a five-day

<sup>1</sup> This lecture was delivered before the recent loss of the "City of Genoa" off Spezzia.

schedule. It is generally recognised that, with a little night flying, 1,200 miles a day can be flown.

#### AFRICA.

When I spoke here last, Captain Gladstone was carrying out his experimental service and Sir Alan Cobham was just about to start on his round-Africa flight. Captain Gladstone's efforts, having led to the co-operation of the African Colonies, the two pioneers joined forces and obtained promises for a large volume of support from various colonies for the project of an East African air service. Negotiations were opened with Imperial Airways, and a subsidiary company has been formed for the purpose of operating a line from Egypt to Cape Town. The Union of South Africa has committed itself to subsidies totalling £400,000 during the next five years, and the other African Governments, the Sudan, Kenya, Uganda, Tanganyika, and North and South Rhodesia are more or less committed to smaller sums. Here, I think, is a real Imperial route under one Imperial organization. I hope that the first half of the line, from Cairo to Kenya will be in operation next summer, and the second half, from Kenya to Cape Town six months later.

Imperial Airways have undertaken to do the journey from Cairo to Capetown in nine days; but as soon as the route is fully organized, and proper wireless communication, meteorological reporting, etc., comes into existence, the time table will be speeded up.

#### FUTURE DEVELOPMENTS.

So much for our two main lines. Branching from these there are endless local possibilities of which we hope the people in those areas will take advantage. In addition there are at present, in various parts of the Empire, many projects under consideration by business men of real repute and standing. There is, for example, the connection between Ireland, Lancashire, Yorkshire and Northern Europe; a line from British Guiana through Trinidad to Venezuela; a line from Baltimore to Bermuda; a line from Dakar along the West Coast of Africa to Nigeria.

Altogether in air transport the outlook to-day, so far as business and finance are concerned, is very different from that which obtained two years ago.

#### AIRSHIPS.

The plans for the future in relation to airships are still uncertain. It is hoped that one of our new airships may go to India this winter, and another to Canada next spring; but a great deal more capital and much patience are needed before a regular commercial service can be established. We already know of many possible improvements.

Dr. Eckener has given a magnificent demonstration of the possibilities of the airship in the Graf Zeppelin, for which we owe him gratitude. Perhaps two years hence there will be a good deal more to say about this subject. Our ships are admittedly better than Eckener's, and it is up to the British Empire to profit from his fine example.

#### SOVEREIGNTY OF THE AIR.

A most important problem is the question of the sovereignty of the air, and the claims which various nations are likely to put forward with regard to legitimate and proper commercial air transport over their territories. The general spirit of the International Convention for Air Navigation which was drawn up in the War was that every nation adhering to that Convention should give perfect liberty to all other adherents to fly over its organized, established, and advertised trade routes. Article 15 of that Convention states the following:—

"Every aircraft of a contracting State has the right to cross the air space of another State without landing. In this case it shall follow the route fixed by the State over which the flight takes place. However, for reasons of general security it will be obliged to land if ordered to do so by means of the signals provided in Annex D.

"Every aircraft which passes from one State into another shall, if the regulations of the latter State require it, land in one of the aerodromes fixed by the latter. Notification of these aerodromes shall be given by the contracting States to the International Commission for Air Navigation and by it transmitted to all the contracting States.

"The establishment of international airways shall be subject to the consent of the States flown over."

The French interpretation of the last sentence, which is much the same as our own, is as follows:—

"L'établissement des voies internationales de navigation aérienne est subordonné à l'assentiment des Etats survolés."

The Italian translation, however, is as follows:—

"L'impianto delle linee aeree internazionali è subordinato al consenso degli Stati da attraversare."

The latter means an international air *line* which is a different thing altogether. We, following our own custom of the freedom of the seas, have preached the freedom of the air. In other words, an air route or airway having been established across a country, every nation in the Convention should have a right to fly along that route without let or hindrance. But the Italian interpretation is that if it is desired to operate an air line along an airway across a country this must be a matter

for negotiation, and they claim that any country has a perfect right to say "No; you shall not use this airway." This matter came to a head in Paris last June, when we put forward our policy of freedom of the air. I am sorry to say that this policy was rejected by twenty-seven votes against four—the latter four countries being the United States, Holland, Sweden and ourselves.

The claim to obstruct aviation, and the fact that in Europe air transport exists only by Government subsidy are the two curses of civil aviation on this continent. So long as Government subsidies are necessary, Government interference in many purely business and commercial questions, such as time tables and frequency of services, will continue. The taxpayer wants a *quid pro quo* for the subsidy which he provides, and so his Government lays down the types of aircraft to be used and is inclined to obstruct foreign activities in competition with their national subsidized companies. If we have that sort of obstruction in Europe, free commercial development becomes impossible. It makes the operation of long distance air routes very difficult for small nations, and renders it difficult for a nation like ours situated at the edge of Europe to establish a really commercial air route running across a number of different States. Fortunately, progress is being made in the direction of putting civil aviation on a paying basis, and Imperial Airways can fairly claim to have made at least as much progress towards eliminating the necessity of subsidies as any other company.

#### INTERNATIONAL CO-OPERATION.

Long distance air mail services are going to help air transport towards operating without a subsidy. Our national policy is very simple: it is to carry British mails on British aircraft to every part of the Empire. There are critics of this policy, and certain countries would like to maintain that they have the right to carry the British mails across their particular territory. This sounds very pretty on paper, but in practice it would be lunacy. Think of the Indian mails being carried by French, Swiss, Italian, Greek, Egyptian, Palestinian, Iraqi and Persian aircraft, as well as our own—eight or nine different nations in 5,000 miles! This would be perfectly impossible. All our experience goes to show that some central authority is required over the whole length of a through main route, such as that from London to Melbourne, over 13,000 miles. Central control and standardization of methods is the keynote of efficient operation. If you depend on other people to fill in gaps, general confusion and misunderstanding must arise.

This same reason, the necessity of central control over a long air route, will bring about another development. I believe that as subsidies become unnecessary, big international combinations will be formed and

absorb many of the existing small national companies of Europe which now work over comparatively short distances. Until the subsidy is abolished these small companies must remain national entities. Once relieved of that assistance, they will amalgamate with more powerful and wealthy neighbours, and thereby reach a position to compete with our British Imperial long distance lines.

In *The Times* of 26th September, there appeared an interesting article by Prof. Madariaga who, when writing about the suggested creation of the United States of Europe, said that this was really an impossible ideal. He went on to make some striking comments on civil aviation: these are his words:—

"There is one direction in which action is overdue. Civil aviation is in a state of chaos. Rivalry ostensibly commercial, yet hiding unpleasant military jealousies, is preventing healthy development save perhaps in Germany, the splendid progress of whose air science and practice is fostered by the freedom from military pre-occupations which she owes to the Treaty of Versailles.

Now, air transport is essentially international, and, moreover, it is indispensable that an international organization should control it in order to remove distrust of civil aviation as an obstacle to air disarmament and therefore to all disarmament. 'Europe' might live up to the *Zeitgeist* and begin in the air. Just as motion is proved by moving, so co-operation might be proved by co-operating in something immediately practical. Other similar activities might follow, and, while we should thus be busy working, we might quietly drop the 'United States of Europe.'"

That shows you what some people are thinking about civil aviation in Europe.

#### NEW ROUTES.

International competition will bring about certain changes in the direction of our air routes. As I have already indicated, before very long the Indian mail will be taken by a short cut over Cyprus instead of going down to Egypt. But there is a still shorter route which may be used some day, via Berlin, Warsaw, Kiev, and across the northern end of the Caspian Sea, to Bokhara, Kabul and Delhi. This represents 4,358 miles, which is a saving of 1,880 miles on our present route. It seems to be obvious that as competition develops we shall have to adjust some of these routes with a view to shortening the journey for through traffic. Even the present German-Russian line via Moscow and Teheran saves about 166 miles on our route as far as Karachi.

Eventually, it seems to me, through air traffic to South Africa is bound to take a straighter line. Again, some of the most important

routes in the future must go via the Arctic Circle, possibly in the first instance by airship or long range aeroplane. Already intelligent people are looking at the possibility of reaching Vancouver from London via Iceland, Greenland, and Hudson Bay, the Great Circle route, and practically the shortest possible route.

Another interesting step in progress will be the general adoption of night flying. Under ordinary present day conditions, with only daylight flying, one can count on covering 700 miles a day anywhere; with a little night flying, 1,200 miles; with seriously developed night flying 1,800 miles; and eventually it is obvious that we should be doing 2,400 miles in twenty-four hours.

#### SPEED.

I feel convinced that we must have still greater speed for mail and passenger aircraft. Speed not only saves time, but lessens the effect of bad weather; it permits longer distances to be flown by daylight; it saves fuel and renders strong headwinds less damaging to punctuality and so makes connecting services more reliable. In our latest specification for commercial aircraft we are asking for 110 m.p.h. cruising speed, which means about 130 m.p.h. top speed, and one of our leading designers is talking of a top speed of 150 m.p.h., which should give 125 miles cruising. In the United States one company is said to be working at 150 m.p.h. cruising speed.

The trouble is, of course, that speed reduces the paying load, which sends up fares and freightage, but I believe air transport has now reached a point where there exists a considerable number of rich business men really prepared to pay for the advantages of speedy transport by air. If so, we will charge economic rates for higher speeds.

There is yet one other point in this connection. To me, there is no doubt that in the near future air mail must be carried in special mail carrying aircraft, and not be mixed up with passengers as at present. Here, again, speed will come in, and cruising speeds of at least 130 m.p.h., and probably very much more, with an endurance of at least 1,000 miles will be necessary. Such aircraft would reduce the time for the air mail to India to about four days without any night flying at all. The cost per ton mile, of course, would be very much higher, but if only the public will provide the traffic, quite a small surcharge on each letter would cover this cost.

#### THE FUTURE.

Finally, I must reiterate what I said in 1927: "Personally I believe that the future will develop on much the same lines as have existed in the past with regard to the Royal Navy and the Mercantile Marine." Our aircraft industry is waking up to that fact now and everyone realises

it. The manufacture of military aircraft is going to be a specialist job confined to a few firms. The big business and the national industry will lie in the construction of commercial aircraft." I continued: "The day is coming when air transport will pay its way. In fact, in one or two places in the United States it is already paying its way. The moment the business men of the world are convinced that there will be money in it in the near future, a tremendous demand for commercial aircraft will develop. In the past we were absolutely supreme in the shipbuilding industry, and we know what that meant to us, both during peace and war." Well, air transport in America is paying its way, and we have two great rivals in the aircraft market to-day in the Americans and the Germans—the former with their tremendous capital and volume of trade, and the latter in their freedom from military responsibilities, their intelligence and their realisation of the value of this industry. I also said "The demands of commercial aviation will be far greater than those of military aviation. We have the material; our pilots and our mechanics cannot be rivalled"—that still holds good—"our designers and constructors have proved their value." That also holds good. Then I said "This is shown by two outstanding achievements. Our recent victory in the Schneider Cup at a speed which completely beat all world records." Well, we have just repeated that great performance.

Then I talked of the Imperial Airways Service between Cairo and Basra. They have kept up that wonderful reputation, except for the one accident of which I have spoken. I can say, as I said substantially on the previous occasion, that the last two years have seen some noteworthy performances in aviation. "Neither are these mere stunts; in aviation what is a stunt to-day becomes a practical proposition to-morrow." In a way that is proved by the Schneider Cup. These high speeds will be assimilated as being quite ordinary, and we shall use the lessons learnt in attaining them for commercial purposes.

I concluded, on the last occasion, by saying what I can repeat now; "commercial air transport will bring the scattered units of the Empire closer together and facilitate administration, co-operation and mutual understanding."

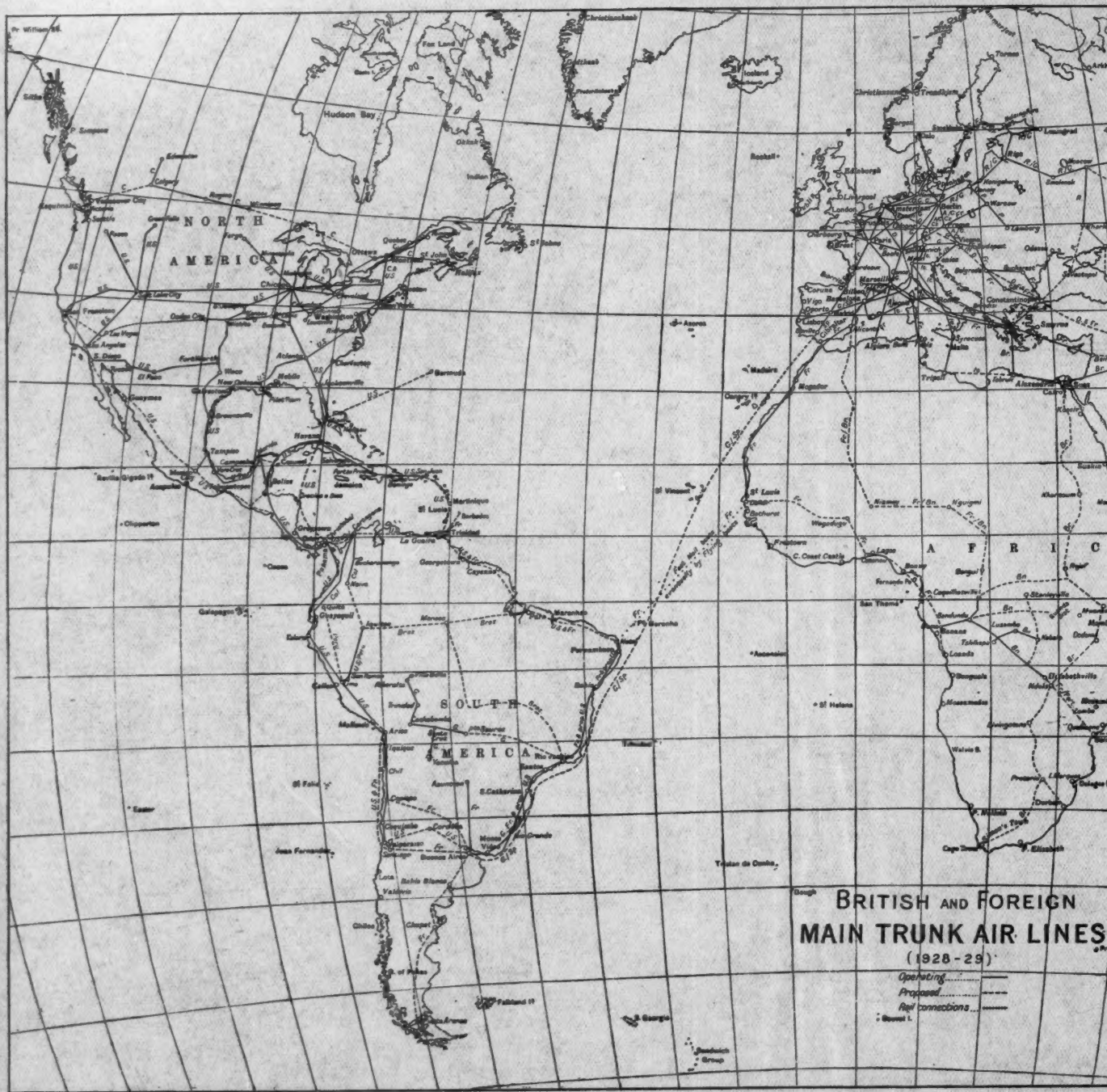
There was no Discussion.

#### THE CHAIRMAN:

There is one thing that emerges very clearly from Sir Sefton Brancker's admirable address. He has reviewed the activities of all countries and the progress which they have made, and it is quite evident that we still lead the way in efficiency and safety. We apparently only lag behind in the assistance that is given by our Government in the matter of subsidies. To me it is very gratifying to think that during the past few years, in view of the small amount of money paid out in subsidies, civil aviation should have achieved so much.

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.





Ordnance Survey 1926 (G.S.G.S. No. 3888)

Air Lines from information supplied by the Air Ministry.



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## THE DEVELOPMENT OF FRENCH AIR POWER

*A précis of an article that appeared in the German Militär-Wochenblatt,  
25th September, 1929.*

**F**RANCE is usually regarded as the leading air power in Europe, sometimes even of the world. This view is founded on a purely numerical comparison of French machines and personnel with those of other great nations: in these respects France is undoubtedly superior.

On the 1st July, 1929, the French Air Force consisted of as many as 137 Squadrons, the strength of each varying from ten to twelve machines, making a total of 1,580, and if the reserve establishment, amounting to another 60 per cent., be included this total is brought up to 2,500. To this must also be added some 2,000 experimental, training and instructional machines, which, within certain limits, are of potential military value. The strength of the personnel is about 1,600 officers and 30,400 non-commissioned officers and men. There are, in addition, fifteen squadrons attached to the Naval Air Service, correspondingly strong in personnel and machines. And yet, according to a new Bill, this already powerful force is to be increased to 201 squadrons.

Only a short time ago France possessed no separately organized Air Force, and this service was regarded as merely auxiliary to the Army or Navy, while its direction lay in the hands of the military General Staff. But during the last year a change of ideas has been taking place, and there are many who wish to see the Air Force established as a third and independent branch of the French fighting forces. Nevertheless, it is only since the establishment of an independent Air Ministry paved the way for a conflict with the narrow policy hitherto adopted by the General Staff that the supporters of this new plan have been able to gain a hearing. It is, therefore, a matter of the greatest importance to the whole military world to follow this conflict closely, since it depends on its outcome whether France will be, as she has been up to now, the strongest military power on land only, or whether she will become equally powerful in the air.

If the French Air Ministry is to carry out the task for which it was created, that is, to make France a real air power, its efforts in this

direction must, above all, be concentrated on the transformation of the material of the Air Force. For it is clear that a different type of machine from that considered suitable for the work hitherto assigned to the service must be introduced if the force is to be capable of waging independent war in the air. Formerly the chief part was played by the fighter, this being the most efficient type of machine for operations over a limited area, and second in importance came the bomber and heavy fighting aeroplane. The conversion of the French Air Force from one predominating type to another must, therefore, be a test of the foresight and energy with which the Air Ministry attacks the problems before it. The new construction programme undoubtedly gives the impression that the authorities are well aware of the need for a change; but it is also important to know how much support the new policy has found in wider military and air circles. For only energetic and determined championship of adherents within the Air Force itself will enable the Ministry to carry out their appointed task.

The following extracts from the French Service press will serve as examples of the opinions now being expressed on the matter in that country. The problem resolves itself into one of the respective value of the single-seater fighter and the modern heavy fighter, and the controversy has been given a prominent place in "Les Ailes," from a recent number of which we quote some relevant comments. In No. 423 the well known French Air expert, René Sologne, has an article entitled, "Will the Air Cruiser supersede the Fighter?" By air cruiser he means the heavy fighting machine, of which the best known types are the Blériot "127" and the Swedish Junkers "K.37." M. Sologne says, "I recently visited the Technical Experimental Works at Villacoublay, and was shown round by one of the leading pilots of the establishment. As we were looking at a Blériot '127' he said that he had piloted a fighter in the war, but that he could not imagine himself attacking the Blériot in it, and he further remarked that this new heavy type probably meant the end of the old fighter. A month later I heard a similar opinion expressed by one of the oldest pilots of the 34th Fighting Squadron. This made me wonder which type would, in the future, hold the field; the old fighter or the air cruiser. The function of the fighter was to maintain supremacy in the air, and in the Great War it acted as an attacking as well as a protective arm. But could it wrest this supremacy from enemy aircraft such as the Blériot '127'? A single fighter, no matter how well it might be manoeuvred, would have no chance whatever of success against the heavier type; it would certainly be overwhelmed. In my opinion, the air cruiser is a machine which will become indispensable to any nation that wishes to be in the position of a real air power. It is the aeroplane of the future. The

single-seater fighter, however, need not be abolished altogether, as there will always be special duties which it alone is best fitted to carry out."

In "Les Ailes," No. 428, a similar opinion is expressed by another expert, André Frachet, who says with reference to the Junkers "K.37": "The flying fortress has become a reality; its introduction therefore is imperative."

The article by René Sologne inevitably resulted in the discussion being taken up by other experts, and all those who took part, even those who broke a lance on behalf of the single-seater, concluded that the heavy fighter was essential for extensive operations, and that the only use for a single-seater was to protect a battle front from air attack.

We will quote one more opinion, the author of which prefers for obvious reasons to remain anonymous. This appeared in "Les Ailes," No. 429, and ran: "When your contributor René Sologne started a discussion of the rival merits of the heavy fighter, with wide radius of action and superior offensive and defensive powers, and the old type of fighter he was stirring up muddy water. He could not have known that French air policy is governed by a small oligarchy who regard the single-seater as the aristocrat of the air, and give it a privileged place in their estimation. This fact explains why, up to the present, the technical development of the heavy fighting machine, or even of the two-seater fighter, has not progressed as it should and could. The pilots of our single-seaters do not want to be pushed off their thrones, and those with a place in the sun are doing their best to keep the larger machines from their rightful position. But your readers and our distinguished pilots of fighting machines can say and think what they like; in a short time the single-seater will have reached a point beyond which no further development will be possible. It can only increase its speed, and that is the very thing that will render it useless. For I should like to know how such fighters and their opponents could shoot at each other when going at a speed of 350 to 450 kilometres an hour? Even if automatic armament, suitable for use at such a speed were successfully evolved, there would remain the problem of personnel, since out of one hundred pilots probably only one would be able to use such a machine with judgment and effect. The many accidents which have occurred when practising for the Schneider Trophy have shown that we cannot play with speed without risk. But all these aspects of the question are being veiled by lies and caste prejudice.

I have perhaps said enough. But I must conclude with the firm conviction that the supremacy of the heavy fighter will soon be realized. For it can attain the speed of the single-seater by an increase of engine power, and can also increase the strength of its armament. What chance

would the half-blind and miserably armed single-seater have against this mighty machine?"

These examples will suffice to show how keen and bitter is the conflict, and we will conclude by quoting some remarks made by a well known Frenchman, Jean Herbillon, when discussing the military value of the Dornier "Do.X." He considers that the significance of this type of aircraft is not appreciated in France because the idea of an independent war waged in the air, and extending perhaps over the world, has up to now been purposely ignored. He says: "In France a fact which to-morrow will probably be a threatening reality is not properly understood, namely, that in the matter of waging war in the air we are mere novices. World developments in this respect overtake us almost daily with new technical discoveries of growing importance. In matters of aerial warfare experiment should be ten years ahead of technical actualities, and had we thought far enough ahead in 1919, the Dornier 'Do.X' might have been the result of our efforts, and we, not the Germans, might now be benefiting from that technical advance and experience. But we have not moved since 1918, and so we are now in effect twenty years behind, whereas our creative minds should be employed in evolving a type of aircraft which would be the Dornier 'Do.X' of ten years hence."

Judging from the above opinions the foreigner can but conclude that an important change is taking place in the minds of those interested in French air power. If the French Air Ministry can count on this continuous support, it will probably be successful in achieving its aim to create an Air Force which will be an independent and separate branch of the fighting Services, instead of it being regarded merely as a new kind of firing position for *artillerie d'appui direct*.

## ARMY EXERCISES 1929

By CAPTAIN B. H. LIDDELL HART.

**T**HE manifest artificiality of the exercises which crowned the year's training caused some disappointment, since it was hoped that they would redeem a season of curtailed training—the sequel to a curtailed training grant.

In one sense they were the most important since the Army manoeuvres of 1925, when the troops of the two chief home commands had been pitted against each other. As in 1925, Westland (the Southern Command) brought to "war" its whole available forces, and although Eastland (the Aldershot Command) only made its invasion with one division and attached troops, its force included considerably more armoured and motorised troops than in 1925. But, unlike previous years, the Manœuvre Act was not put into force, so that operations had to take place within the narrow limits of Government ground, with such small extensions as were permitted by public-spirited landowners. The areas were thus so cramped that they afforded neither scope nor true test for the increased mobility which was the main characteristic of the forces engaged. A head-on collision was inevitable—indeed it was "directed"—and one may feel that under the artificial conditions of "war in peace" such a collision is more apt to produce false lessons than true.

Fortunately such customary means of test can always be supplemented and corrected by the cheaper form known as pure reasoning. This will also be the safer form if it is based on a knowledge of history and an understanding of mechanical conditions. And such reasoning might have saved both money and time spent on some of this year's experiments. For mirth rather than mobility was provided by the "three-piece" miniature road-train which cumbrously hauled the new anti-tank guns—with the gun pointing to the rear while in motion, and so far less tactically efficient than its mobile quarry, the tank. Again, it really did not require a prolonged and varied series of tests to ascertain that a cross-country machine of the Carden-Loyd type, little and low, was a better means of bringing the machine-gun into action than by the old horse-limber and man-handling; and better also than the

unarmoured six-wheeler or any form of large armoured pantechicon. Yet the simple deduction was to some extent obscured by the "brain-wave" of attaching to each Carden-Loyd a four-seater trailer on tracks—admirably calculated to nullify their advantages. First, the extra load reduces the mobility of the machine-gun carrier. If the device is continued, the carrier will have to be fitted with a more powerful and hence more expensive motor—the usual vicious circle of design. Secondly, in contrast to the two-man crew of the armoured carrier, the four men in the trailer are exposed to fire. Further, as they decrease mobility, they also increase visibility—and vulnerability—for the carrier is not only slower in reaching a fire-position, but has less chance of reaching it unobserved if it pulls a trailer behind.

This atmosphere of unreality, due to the experimental use of rather unpractical instruments in unpractical forms of test, could only produce a "depression." But although rather general it is also temporary and has fair promise of giving place to an anti-cyclone which will not be anti-tank. For the best feature of the year is the lifting of the old antipathy to progress in general, and to the tank in particular. With few exceptions, there is no longer a search for an excuse, or a training incident, to decry the tank. This feeling shows that there is a general tendency to appreciate more clearly the essential nature of the "new warfare." One may still feel discouraged at the slow rate of change in equipment, at the paucity of tanks in comparison with the superfluous mass of infantry, and at the way the former are mishandled by the convert who has not thought out the foundations of his faith. But then, in conversation, there is now voiced that very view which three or four years ago he vigorously opposed—as you remember and he does not. As if by a vivid flash of light, the distance already travelled is revealed.

The official objects of the exercises were six—to test in the field the experimental organization of infantry brigades, the best method of carriage for machine-guns in the infantry machine-gun company, the organization of a cavalry regiment, the employment of light and medium tanks, combined in one formation, radio control within a tank battalion, the experimental organization of ordnance workshops.

Taking them in order, I feel that there is no question that the inclusion of light tanks greatly increased the offensive power of the infantry brigade, which had dwindled almost to zero. In practice, indeed, they formed the real assaulting troops, and the infantry battalions were little more than a supplement for "mopping up" and taking over captured ground. But it is a very big question whether this benefit to the infantry brigade was not purchased at the expense of the whole ;

whether it was adequate compensation for the loss of strategic mobility and effect which would result from tying tanks so closely to infantry.

A lesser aspect of this year's experiment was the inclusion of mechanized mortar batteries. This seems an unqualified asset, save in so far as it hinders the provision of more light tanks.

With the second object of the official tests I have already dealt, while the third seems to be a characteristic example of our national want of logic. Mechanization has certainly increased the power of cavalry in proportion to the increase of mechanization. But at the present rate they will soon cease to be cavalry except in name and expense, and the mixture of horse and machine is a compromise of dubious practical result. It would be more logical either to convert them completely into "new cavalry"—completely mechanized troops—or to maintain them on a strictly horsed basis.

The fourth experiment, the combination of light and medium tanks has in part fulfilled a suggestion which I made in this JOURNAL two years ago—when the first mechanized force was improvised and the light tank was in infancy. But the unfulfilled part of the suggested method offers, in my view, a prospect of improving upon this year's practical trial.

One medium tank battalion, the 2nd, has been re-organized to comprise two companies of medium tanks, sixteen in each, and one company of thirty-two light tanks. After watching it, I still think that the actual company, and not merely the battalion, should be made up partly of light and partly of medium tanks.

Secondly, the light tanks are being used as a screen ahead of the medium tanks, to draw the fire of the enemy's anti-tank guns, and to probe his defences. But, so far as I have seen, they then try to rush in amongst these, firing as they go. I am inclined to think that such a method risks too much and expects too much. That where defences are strong light tanks would suffer too heavily, and that, firing on the move, their fire would not be sufficiently effective.

They might do better by more closely following the Mongol method. If the enemy is found to be weak in counter-weapons, then go ahead. But if he is known or found to be strong, let the light tanks wheel about after drawing the defenders' fire, and then take up some previously noted fire position on which they can, for the moment, convert themselves into stationary machine-gun nests. From this position they could develop a really effective concentration of aimed fire while the second line of tanks advanced to deliver the actual attack. This same method could and should be applied among themselves by battalions composed entirely of light tanks which will form the future light armoured brigades.

The use of radio control within a tank battalion is primarily a technical problem, but the exercises at least confirmed theory in showing that its solution is bound up with the whole problem of mechanized warfare and that, once obtained, such control will revolutionize the strategic and tactical conceptions of mobility. As for the mobile ordnance workshops, the right deduction would seem to be that they should not accompany the fighting part of a formation, and that a breakdown lorry with spare parts should suffice for this.

But the greater value of this year's exercises, as a whole, lay not so much in their light upon these "official objects" but in crystallizing thought upon some of the wider problems of future war. Four of these stand out: the future of the tank, the future of the "anti-tank," the future of military technique, and the future of military art.

When the Armoured Force was temporarily broken up a year ago and its ingredients used in a fresh experiment, that of modernizing the infantry, I suggested that in this apparently retrograde step there was the possibility of a fresh advance. For although reason indicated the fallacy of tying tanks to infantry and so cramping their mobility, a knowledge of human nature indicated the value, not only of such a negative lesson, but of convincing the infantry of the advantages of mechanization. The forecast proved truer even than one hoped. Indeed, the enthusiasm of the infantry for armour, and for crossing the danger zone at motor pace instead of walking pace, has become almost embarrassing.

This year enough Carden-Loyds were provided to form two battalions of light tanks, as well as serve as armoured carriers for some of the infantry machine-guns. An immature type, they had still many limitations, especially in crossing ditches or crashing through hedges, while their armoured turrets were merely simulated by canvas and wood. But by their nimbleness, their invisibility, and their smallness as targets, they made a deep impression. Candid artillerymen said frankly that they could not hope to hit such tiny machines. Candid infantrymen confessed that they felt as helpless as if attacked by a swarm of bees. A few score of such midget machines was a very small number for effect, but it was enough to present a picture of the result of an attack by several hundreds—or thousands. Through their being not enough it was enough to make one realize that numbers are essential; that two hundred would be far more than ten times as effective as twenty.

But there was a still more far-reaching effect of this demonstration of "light-tank" power. Although the infantry battalions were only given Carden-Loyds as machine-gun carriers, they soon wished to fire the gun from these little mobile mountings instead of dumping it on the

ground. And before long they were craving to use them as "in-fighters," as armoured assaulting troops. Why expose 150-200 cloth-clad infantry for half-an-hour in slowly crossing a bullet-swept stretch of ground in order to seize some tactical point when a dozen "armoured" infantry could rush across in a few minutes—and have more chance of seizing it without a fight? In such situations minutes are momentous, and the history of war has countless proofs that a handful of men can often gain a position which half-an-hour later a thousand cannot gain, while half a day later 10,000 are too few. Before mechanization, such chances depended on luck or inspiration, but the advent of fully mechanized infantry makes them more calculable and certain in effect. Again, "soft-spot" tactics, which the war revealed as the only practical and successful form of infantry attack, becomes far easier and more menacing to the defender when "infiltrating pill-boxes" replace infiltrating foot-sloggers.

Clear thinking, however, is essential to guide the infantry majority's new enthusiasm for a bullet-proof skin and mechanical legs. Such use of "armoured" infantry is a separate need and problem from that of either light tanks or mechanized machine-guns. Separate equipment and personnel are required for this essentially different tactical role. If the infantry battalions want such "in-fighters," they must give up part of their unarmoured numbers to obtain them.

Just after the war I wrote an article in this JOURNAL on "The Tank as a Weapon of Infantry." Ten years later the idea seems to have a prospect of fulfilment. The inclusion in the battalion of such mobile pill-boxes would simplify the training and tactics of the platoons by enabling them to dispense with Lewis guns, which at present make platoon tactics complex in peace and impracticable for war. The platoon might then be re-organized on a basis of three rifle sections, which would give it a lower nominal but a higher effective strength than to-day. Further, I would advocate the uniform adoption of the organization "by threes," and regard a total battalion strength of 500 as both adequate and more suitable for modern conditions. This would mean a saving of nearly 300 men in peace, and more in war, and would amply pay for the provision of "armoured infantry" machines. These machines can afford to sacrifice some of their speed, both for cheapness and for extra armour if requisite, although one may recall that the Roman infantry were content with a stout shield without wanting armour on their backs.

But however desirable are such armoured infantry, they are less essential and urgent, from a broad military point of view, than the provision of light tanks in true armoured formations. For the latter constitute the real strategic weapon which may nullify both the gaining

and the holding of positions, and by manœuvre against the enemy's supplies, cripple him without a fight, thereby saving thousands of lives.

If soldiers appreciated the attitude of the public more fully they might hasten the process of mechanization. For public support will not be forthcoming, but will rather be diverted elsewhere, unless the public is assured that its money is going to provide an army radically different from that of 1914-1918; one which will at least hold out a prospect of quicker and less expensive results. He who pays the piper calls the tune. It is possible that a mechanized army may fail to obtain quicker results: but an unmechanized army will not even be allowed to try. The memory of the Somme and of Passchendaele has sunk too deeply into the imagination of the British people, and is one of the few war lessons which are being passed on to the rising generation. This impression, indeed, is even combining with the mechanical outlook of modern youth to dry up the flow of recruits to the infantry.

Nor has the infantry prospect been brightened by the actual appearance of an infantry anti-tank weapon—the .8-inch machine-gun. Indeed, it has abruptly dispelled the illusions created previously by the use of a flag to represent it. A flag which was not only delightfully easy to handle, but "bred like a guinea-pig," so that tanks were felled as if by a magician's wand. The actual weapon is so heavy and long-barrelled that it is a poor counter to mobile tanks, especially when hauled about, as at present, by a "Tom Thumb road-train." The alternative is to mount it in a tank, whereupon it ceases to be an infantry weapon, and perhaps even a light tank weapon, since technical factors suggest that, if an all-round traverse is demanded, the gun can only be mounted in a machine larger than the present light tank.

The difficulties of the anti-tank problem, moreover, are not limited to the limitations of the anti-tank weapon. As tanks multiply on the "battlefields" of peace, gunners are coming to realise the difficulty of distinguishing friend from foe—and how much more difficult it would be amid the murk and confusion of a real battlefield. Again, smoke screens are being increasingly developed as a cloak to tank attacks. But their value in deliberately blinding the enemy gunners might well be less than their unintended value in so increasing the murk that gunners would not dare to fire for fear of hitting their own troops. Further, the general increase of tanks and other mechanized vehicles so multiplies the "noises off" that differentiation is difficult and surprise more easy. One used to be able to detect the approach of tanks while they were still several miles distant, but this year tanks have repeatedly arrived within a few hundred yards of the defence without being noticed. Thus, by a military paradox, the very fact that the use of tanks has

ceased to be a surprise gives them more prospect than ever of achieving a surprise.

Our third problem lies in the domain of theory. Two of the main obstacles to the adequate provision of tanks, especially light tanks are the "man-power" and "ideal" obsessions. The Army has so long thought in terms of numbers, counting heads, that although it pays vocal tribute to fire-power and mobility, it has not learnt to calculate in these terms. Hence it still wants "to have its cake and eat it," and although eager for mechanized units, cannot bring itself to part with any of the old to pay for them. Further, it is slow to realize *practically* that mechanical power should replace man-power, and even in the mechanized units too high a proportion of surplus men are provided. In the otherwise excellent new manual, "Armoured and Mechanized Formations," the strengths of units are on an excessively lavish scale, e.g., an average of seven officers and men is allowed for each light tank, the machine which was originally intended as a "one-man tank." The Air Force, having been born in a mechanical age, finds one man sufficient to fire a machine-gun and pilot the machine which carries it. If it adds another man it adds another machine-gun.

Secondly, the progress of mechanization suffers from the technical expert's pursuit of an ideal machine which will meet every possible, and normally improbable, condition. He wants a "100%" mechanism instead of being content with a machine which will satisfy 80% of all conceivable requirements. The cry for "bigger and better" machines is already raising the estimated cost of the light tank from £500 to nearer £2,000, and if the desire for thicker armour and higher power is not limited, it will end in another large tank—and so forfeit the supreme asset of invulnerability through smallness of target. For centuries soldiers have suffered the numberless defects and limitations of the horse, yet when a machine is invented they will have nothing short of perfection.

This exacting "idealism" has several unfortunate facets. One is the ruling that petrol should be treated as a "normal" supply, like rations, instead of like ammunition. Another is the tendency to drag tanks and other mechanized vehicles down to the infantryman's pace, instead of recasting the infantryman's means and method of movement. It is significant that when recently these machines were tried in making half-hourly and hourly bounds respectively behind the infantry, they used nearly twice as much petrol in the shorter bounds. The difference of wear and tear must have been still greater. Yet the system of half-hourly bounds was itself a great improvement on an actual march "inside" the infantry column. No wonder that the present repair bill makes mechanization seem expensive.

The hardest problem to-day is not so much to obtain better machines as to obtain officers trained to think "mechanically." Must we either have recourse to one of our great transportation companies to provide our staffs in another war, or can we send our rising officers to such organizations for training? For we need mechanically-minded realists, not idealists. We need also a much overdue clear policy of mechanization, in which strategy will guide through tactics our technical design.

This brings us to the fourth problem, and here the lessons of the year are still more negative. It may be admitted that we are far stronger in the technique of war than in the art of war. And examples of art in exercises were more frequent five or six years ago than now. Then, an observer could usually count upon seeing several instances of thorough and ingenious research for surprise, for mystifying and upsetting the opponent. But in the last year or so there have merely been flickers of light. This is the more curious as the originality of schemes has increased. Yet the greater opportunity for practise in the *art* of war has not yet been exploited. What is the cause? Is it that the British officer is by nature deficient of imagination or that the complexity of modern technique tends to swamp what Marshal Saxe called the "sublime," or what we should call the psychological aspect of warfare? Personally, I think that while both these factors have an influence there is a deeper cause, namely, that in all our military training we invert the true order of thought, considering technique first, tactics second, and strategy last, if at all.

In peace especially—and paradoxically—our whole attention is concentrated on the fight, whereas the logical object of strategy is to reduce the need for fighting. Strategy attacks the enemy's mind and will; it acts mainly through the stomach by attacking his supplies. Peace-time conditions tend to obscure this truth. In exercises the fighting troops and their first line transport are present, but not the rear services, save in imaginary or skeleton form. In consequence, the Q side, the foundation of strategy, is overlooked or neglected. Other factors, apart from lack of the necessary transport, tend to accentuate this distortion of reality. One is the short duration of the exercises. Another is the short distance which usually separates forces at the start of an exercise. A third is the justified impression that an ambitious officer should avoid becoming labelled as a Q expert.

The harmful reactions, moreover, are far-reaching. The mobile arms, and hence the real strategic arms, cannot obtain full value through attacking their proper objectives, which do not exist in peace exercises, and so are used improperly: aircraft and tanks should both aim at the

enemy's transport and communications, whereas their customary attacks on the fighting troops are merely spectacular illusions.

One example of the consequences may be quoted. Watching tank attacks, officers often ask whether the infantry would suffer much harm if they were well dispersed and "lay doggo." Candidly, I do not think they would, especially if they had time to dig themselves into narrow trench-slits. But the real answer is that the tanks should not be ferreting out infantry sections but shooting up the transport and supplies of infantry divisions and army corps. And the real question is what would be the strategic value of a scattered swarm of hungry infantry sitting in trench-slits.

Peace exercises give an utterly false value to "positions," to the passive occupation of ground. Until we make strategy the foundation of our thought, our training and our experiments will tend not to reveal but to obscure the true lessons which, different in form but consistent in nature, can be traced throughout the history of the art of war.

## A PRE-WAR EXAMPLE OF "SANCTIONS"

By PAYMASTER-CAPTAIN H. P. W. G. MURRAY, D.S.O.

*[In view of the fact that edicts of the League of Nations may have to be enforced on a recalcitrant State by the application of either economic or military "sanctions," the following account of a pacific blockade of Montenegro and Albania, and the occupation of Scutari by International Forces in 1913, is of interest.—EDITOR.]*

THE first Balkan War of 1912-1913 was running its course and the countries allied against Turkey, jubilant at their success, were in no mood to listen to the advice or representations of the Great Powers. At this juncture the attitude of Austria and of Serbia caused the future of the Albanian town of Scutari suddenly to become an international question of primary importance.

That town, situated at the southern end of a lake of the same name in the North-West of Albania, had been invested by the Montenegrins soon after the outbreak of the war with Turkey, while later a force of some 25,000 Serbians marched through Albania and joined the Montenegrins. These combined forces were unable to effect the reduction of the town, chiefly owing to the high military capacity of Hassan Rizi Pasha, the Turkish commander. The arrival of the Serbians, however, caused the Austrians to suspect, quite rightly, that Serbia had designs on the town. The Great Powers, therefore, consulted together and both Serbia and Montenegro were informed that Scutari would form part of the autonomous state of Albania, which it had been decided to create in consequence of the break-up of the Turkish Empire in Europe. The Serbian forces were thereupon withdrawn in April, but King Nicholas of Montenegro carried on the siege, as the old King realized the difficulty the Powers would have in bringing any pressure to bear upon him. He was well aware that land operations against him were impossible, since, at this time, all the efforts of the Entente were turned towards preventing the World War, which every upheaval in the Near East seemed about to precipitate. It was therefore decided to institute an international naval demonstration against Montenegro, and at the close of March, 1913, Admiral Burney was ordered to proceed to Corfu, with H.M. ships "King Edward VII" and "Dartmouth." There he was joined by a French cruiser.

The Admiral's orders were necessarily indefinite ; they were briefly to the effect that he was to proceed to Antivari, the principal Montenegrin port, and co-operate with the French Captain, and if possible with the other European Powers represented, and bring any *pacific* pressure to bear on King Nicholas to make him abandon the siege of Scutari.

The British and French ships arrived at Antivari early on the 5th April, and found there an Austrian battle squadron, two Italian battleships and the small German cruiser "Breslau." After the usual formal calls had been exchanged, a conference of the senior officers took place in the afternoon. The instructions of the different members were divergent. The Austrian Admiral appeared to have a free hand, the Italian Captain (a Vice-Admiral appeared later) was ordered to watch the Austrians and report their attitude. The French Captain said he had no instructions, and the German had a watching brief for the whole party. After considerable discussion it was decided to send King Nicholas a telegram pointing out that the presence of the international squadron indicated the determination of the Great Powers to have their directions with regard to Scutari observed, and requesting him to inform the Conference that he was complying with the Powers' wishes.

King Nicholas replied that he was surprised that the Great Powers should so far disregard their declarations of neutrality as to interfere with him in his lawful aggression against the enemy of his country, and added that he hoped on reflection they would think better of it. This attitude showed that Nicholas would not be bluffed into compliance, and a further conference of the Admirals decided on a so-called *pacific* blockade. King Nicholas was informed accordingly and given forty-eight hours to comply before the blockade was established.

A study of the coast and ports of Montenegro does not make it clear how a blockade could harm that country. There are only two small ports, mere villages, and the trade at any time was never considerable, whilst during the war it had practically disappeared as supplies were obtained from either Austria or Serbia. These two sources were however now cut off, and the Montenegrins turned to Durazzo, an Albanian port some sixty miles to the South.

No reply being received from Nicholas, the blockade was duly established, the proper notifications being sent in to the ports and villages on the coast. The blockade included Durazzo and lasted from 10th April to the 14th May. During that period over sixty vessels, some of them only small sailing craft, were turned back, whilst many more remained in their ports and did not attempt to run the blockade. Salt, grain and textiles appeared to be the chief imports which were

stopped, but many miscellaneous articles, suitable for an army in the field, were also kept out.

On 23rd April, Hassan having been shot, Scutari fell, or was sold to the Montenegrins by Essad Pasha, the Turkish Civil Governor, who then marched out with his army. The position looked rather hopeless, since it did not seem as though Nicholas having captured the place, would give it up without some large monetary inducement. Sir Edward Grey elected to try patience and persuaded the other countries, especially Austria, to agree, so the blockade was continued.

News occasionally drifted in from Scutari, and it was not encouraging. The inhabitants were apparently in a bad way for food, and the Montenegrins could not help them much. Disease was stated to be rampant, and shortly after the Montenegrin occupation a serious fire destroyed practically one third of the bazaar part of the town.

On the 8th May information was received from the Austrians, that Nicholas had agreed to hand over Scutari to the Admirals of the International Squadron, and Admiral Burney received orders to proceed there with the other naval commanders to take over the town. That night, M. Plamenatz, the Montenegrin Civil Governor of Scutari, came down to San Giovanni di Medua, a small Albanian port, off which H.M.S. "King Edward VII" was lying, to discuss with the Admiral the arrangements for handing over the town.

The Admirals' Conference was summoned and met M. Plamenatz, but it was only with the utmost difficulty that he could be persuaded to sit at the same table as the Austrian Admiral, who unfortunately assumed a very provocative attitude making it difficult to arrange the business. There was, in fact, little to be settled except the date and time of the transfer, and the removal of the large stocks of war stores, all of which belonged to the Montenegrins in accordance with their arrangements with Essad. Nevertheless, it was arranged that the Montenegrin forces should be withdrawn at least ten miles from the town before the arrival of the International Forces, but that a force of a thousand men without arms should be left as a working party to remove the stores. This party was to camp on the other side of the river Boyana. This seemed a reasonable arrangement and the terms were put into writing, when the Austrian Admiral who had not been listening since a particularly violent outburst by M. Plamenatz had silenced him, stated that he would sign nothing and demanded the immediate evacuation of the town by all Montenegrins without any conditions.

The meeting was therefore adjourned to the following day, and the staff officers proceeded to make the necessary arrangements and draw

up the orders for taking over the town. Two Italian, with one Austrian, river gunboats, were ordered to the Boyana to take up the force. We got into communication with the British Vice-Consul, an Albanian who spoke only his own language and a little French, and he sent his son down to see the Admiral, and we received some first-hand information as to the condition of the town. It was clear that things were by no means desperate, although the people had been through a bad time and were very anxious to see the last of the Montenegrins.

A plan of the town was obtained from the Italians, and it was divided up into five districts for supervision by the forces of the five countries represented. The force was to consist of 1,000, two hundred from each country represented, but owing to the small number of Germans available, it was amicably arranged that the German Force was to be 100, and the British 300. In addition the Admiral decided to take his band as he thought that a little music in the Square would have a soothing effect on the people. It turned out that the Admiral was quite right and the band proved a most popular form of entertainment.

The Conference re-assembled the next day and M. Plamenatz arrived as pugnacious as ever. After a long private interview with Admiral Burney a simple document was drawn up for signature by all concerned. To this was added a postscript, initialled by M. Plamenatz, in which he agreed to remove the troops ten miles from the town, and to have the working party disarmed directly the international forces arrived. The document was then explained to the Conference and all signed it, except the Austrian Admiral, who declined to have anything more to do with M. Plamenatz and returned to his flagship. Admiral Burney then sent his Secretary to see the Austrian Chief of Staff (Captain von Vest), who was a particularly agreeable officer of German origin, unlike the Admiral who was a Slav. Enormously stout and very cheerful, he towered over his Chief and appeared to exercise a considerable influence over him. He spoke English perfectly. After some argument the Austrian Admiral signed the document. M. Plamenatz then departed and promised to have everything ready by the afternoon of the 14th May, the day fixed for taking over the town.

It was arranged that the main part of the force was to proceed at daylight in the two slowest steamers, and that the Admirals, their Staffs, a guard and the band were to go up in the fast Italian gunboat, "Mafalda," leaving at 9.30 a.m., as she could do the twenty-five miles by 2.30 p.m.

The passage up the river was accomplished without incident although we were greeted at points on the left bank by bands of Albanians, who discharged their rifles in the air, careless of where the bullets fell. We arrived at the Customs House punctually and were met by all the

Consuls and a Montenegrin Guard of equal strength to the International Guard... The Admirals and staffs next proceeded to the Montenegrin Headquarters in the residential part of the town, about a mile and a half distant, where we were met outside by the Montenegrin General Becir who shook hands warmly with Admiral Burney. He then loudly proclaimed, in French, that if it had been left to him he would have fought the lot of us to the last ditch, but he was carrying out this humiliating surrender at the behest of his King whom he would always obey. He then added with emotion that his task was lightened in that he handed over the town to a proud son of Britain, a country which had his affection, and to no-one else. Here he glared at the others and led Admiral Burney into his Headquarters to introduce him to his Staff. He very shortly afterwards mounted his horse and departed.

The Citadel, which towered above the Bazaar was visible from the sea at one point, and here the "Dartmouth" had been ordered to anchor, in order to maintain communication by visual until a wireless installation could be set up. The Villa Paget where the Admiral and staff were accommodated, had a small tower which was in visual touch with the Citadel, so that, from the first, the Admiral could communicate with ease with his flagship, and from thence with the Commander-in-Chief.

The Turkish barracks were found to be in a deplorable condition. All the window frames had been removed as well as most of the beams and flooring, for fuel, and the dirt and filth of months were accumulated in and around the place. But all the arrangements for posting guards, etc., worked smoothly, and before dark everything was settled down. Martial Law was proclaimed on our arrival, and notices were posted that the occupation was only temporary. The inhabitants were ordered to be in their houses by 8.0 p.m.

Generally speaking we found the town in a much better condition than we had anticipated. It had suffered little from the frequent bombardments. Here and there a house had been demolished, but the Montenegrins had evidently tried to avoid damaging more than they could help a town which they hoped would be theirs.

## II.

The many problems facing the Conference were :—

- (1) The Municipal Council which acted in a similar capacity to our town and city councils had ceased to function. All the members received, or were supposed to receive, salaries, and these were considerably in arrear.
- (2) The duties of courts of law and the disposal of offenders of the different religions.

- (3) The lighting of the town. There was none when we arrived.
- (4) A police force to maintain internal order.
- (5) A mounted gendarmerie to maintain order outside the town.
- (6) The repair of the roads and the Bachelika bridge over the river Drinasa, which had been destroyed by the Turks.
- (7) Maintenance of sanitary services and the burial of the half-covered corpses in the trenches and fortifications surrounding the town.
- (8) A postal service.
- (9) Payment of officials.
- (10) The raising of revenue. This was the most pressing task, for without money we could do nothing.

In addition there were minor tasks, such as repatriating Turks who wanted to leave and had no means to get away.

It was decided that if money was to be obtained it must be raised locally, and the best solution seemed to be import and export taxes. An officer was installed at the Custom House as Collector of Customs, and the former Collector was taken on as an assistant. An *ad valorem* export duty of 11 per cent. on all goods, and an import duty of 1 per cent., were levied. The small import duty was decided upon in order not to impede the import of foodstuffs and goods which the town badly needed.

The manager of the local branch of the Ottoman Bank was approached and agreed to allow us an overdraft of £2,000 on the security of the customs receipts until the money came in. It was soon raised, as there happened to be large stocks ready to be rushed into the town at Italian and Austrian ports, and the overdraft actually cost the town less than £10.

A Municipal Council was appointed, with an Italian officer in charge, and the salaries were fixed. Two Law Courts were set up. A Police Court, with a French Commander, said to be experienced, as magistrate, and a High Court, composed of the Admiral's Chief of Staff (Captain Heaton-Ellis), an Italian and an Austrian Commander. These Courts worked very well. The magistrate soon became renowned for his loquacity. He dealt with most of his cases with fines, as we had no prison ready to begin with, and these fines were paid in to our banking account. On the representations of the Head Mussulman the Muftis were allowed to continue to deal with cases from men of their own religion, except criminal cases, on condition that the fines were paid to the Commission, and a small amount was collected each week in this manner.

As soon as possible seventy large acetylene lamps and standards were obtained through the Austrian Admiral and installed. This greatly improved the town and facilitated the work of the guards.

The combined police station and prison was in a very bad way, and it took some time to get the place in order and habitable. A Marine officer from the "King Edward VII" assisted by two German seamen recruited a small police force, which was quite efficient, and we soon had a small band of prisoners who were employed in keeping the place clean.

The proper burial of the numerous corpses in the vicinity of the town took some time. The ground is very rocky and the soil is only a few inches deep in most parts. Most of the bodies had been only lightly covered with earth and at the first rain they became uncovered. They were all properly buried in their respective cemeteries.

The sanitary services of the town were undertaken by the Municipal Council, and rapidly improved.

The first monthly payments for salaries and labour amounted to just over £300 Turkish. Before we left in the following October, the monthly bill was well over £4,000 Turkish and steadily increasing. But the bill was amply met by our customs' receipts, and we left the town financially sound, without the citizens paying a single direct tax or rate.

### III.

I must now turn to the Admirals' Conference, or the Commission as it was sometimes termed. At first it met daily. Action taken independently by the Admiral was explained and confirmed. All the Consuls attended these sessions, and one of the most helpful was the French Consul, M. Krajewski, who spoke English perfectly (he had an English wife) and could get on very well in Albanian, Greek, Italian and German.

The Austrian Consul-General was a very domineering personality and was extremely suspicious of the French Consul and regarded his friendship with the Admiral with disfavour. It appeared to the Admirals that they were arriving at a point when the Consuls themselves were about to quarrel as to who was to influence the decisions of the Conference, so it was decided to dispense with the services of the Consuls. They were accordingly thanked for their assistance and told that the Conference would proceed without them in future.

On the 12th June the Admiralty ordered the "King Edward VII" to return to England with the Third Battle Squadron, and directed the Admiral to hoist his flag in a cruiser detailed by the Commander-in-Chief, Mediterranean. The seamen and marines from our ships were ordered to be relieved by a half battalion of the West Yorkshire Regiment from Malta. With the ships went most of the naval officers, but the Chief of Staff, Flag Commander, Wireless Officer and Secretary were retained,

as well as the Lieutenant of Marines who was Chief of Police, and a small signal and wireless staff, with the Admiral's coxswain, four orderlies and servants. The Austrian and Italian seamen were relieved by soldiers at the same time as our own, and French Marines were sent to relieve their seamen, but the German seamen remained to the end.

We experienced very little trouble with the inhabitants. There were occasional brawls and firing at night, but casualties, if indeed there were any, were successfully hidden.

The Commission then turned its attention to three main subjects:—

(1) The formation of a Gendarmerie.

(2) The repair of the roads.

(3) The repair of the Bachelika Bridge.

Although the Admiral's instructions limited his influence to the town of Scutari, it was soon found that the whole North of Albania was looking to the Commission for guidance, and influential Albanians as far South as Tirana, Durazzo and Valona were anxious that the Commission should undertake the Government of the whole country, which was sadly in need of the stable Government promised by the Powers. In the North several murders took place, these being connected with blood feuds of long standing. After discussing the matter with the Roman Catholic Archbishop (in Austrian pay) and the Abbot of the Merdites (a large tribe in the centre) who favoured the Italians, the Admiral determined to see if a Bessa, or peace, with a cessation of blood feuds could be arranged. He therefore called in the principal chiefs in the North to a conference. They arrived headed by the paramount chief of the Malissori who inhabit all the Northern part. The paramount chief whose name was Dedjonluli was a very old man, and was treated with great respect. No one ever walked level with him, but about two paces behind. The chiefs were put up in barracks, and given meals which consisted of oxen roasted whole and beer. About 120 came altogether, and their arms were removed at the outskirts of the town. Those who objected to parting with their rifles were not allowed to enter.

They were an exceptionally fine body of men, most likeable and attractive in their ways, and fine fighting material. They had had nothing to do with the war, except for sniping hangers-on and stealing anything left about, so as to keep the armies away from their own territory as far as possible.

A whole day was given to the Conference on the Bessa question, as they all seemed to want to talk, and it was tedious in the extreme to sit and watch the arguments and not understand a word they were saying. In the end the Bessa was agreed to, and to celebrate it they

shot the Montenegrin Governor of Podgoritzta and his son who were out driving and incautiously came too near the frontier, and another outbreak of war was only prevented by a personal appeal by Admiral Burney to M. Plamenatz.

As a result of the tours of the Commission it was determined to form a Gendarmerie, and an officer of the West Yorks was detailed for this duty. Arms, uniform and equipment were procured from Austrian sources, after a good deal of opposition from the Italian Admiral and a force of sixty men were soon under arms and training.

An engineer who had formerly belonged to an Italian company working in Albania was obtained and given the job of putting the roads in order, and great progress had been made before we left.

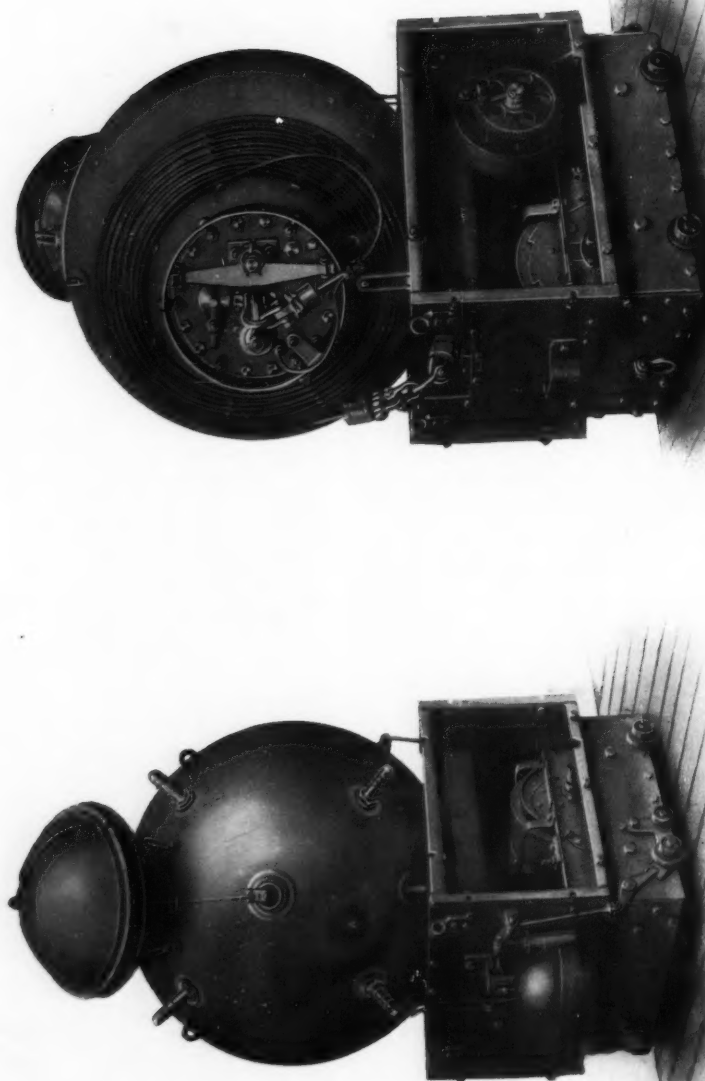
For the repair of the Bachelika Bridge tenders were called from Austrian and Italian firms, and it was the Admiral's wish to accept the tender of an Italian firm with a view to equalising the business between the two countries, the Austrians having supplied the street lamps, the uniform and equipment for the Gendarmerie. By a majority the contract was awarded, as the Admiral wished, the tender of the Italian firm being the lowest and the firm best situated to do the work, but von Barry, the Austrian Admiral, claimed that no decision was binding unless it was unanimous. There was really nothing to support this view, and it appeared to be only a pretext to withdraw from the Commission, which he did.

This was the signal for the break-up of the Commission, as the Powers decided to leave the future of the town to the officers in command of the detachments, until such time as the Prince who was to be appointed took over the Government. On 20th October, we turned over our documents and responsibilities to Colonel Phillips of the West Yorks, and left for home.

The various detachments remained at Scutari until the outbreak of the Great War, probably forgotten or completely out of mind. Our own force was hurriedly withdrawn just before war started.

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A VICKERS-ARMSTRONGS ANTENNÆ MINE UNIT.

...of the mine, but so small was the proportion com-  
pared with the far more generally applicable non-controlled mine that  
their study was very limited. It is therefore, with the non-controlled  
type that this article is mainly concerned. This was because as an  
...  
Shortly after the outbreak of the war a multitude of inventors turned  
their minds to the development of variations of the non-controlled type;  
the result was a new type of mine, the modern submarine mine.

## THE MODERN SUBMARINE MINE

BY COMMANDER A. L. GWYNNE, C.B., R.N.

**F**OR the reason that the submarine mine is a weapon with which the great majority of naval officers have no practical dealings its features must necessarily be somewhat obscure, except to those few who are directly concerned with handling it. Moreover, at the close of the War, in 1918, there were a multitude of designs which must have tended still further to obscure the real aims for which mines are constructed. There was also the paravane, which, in the mind of the optimist, enabled ships to sail unharmed through any minefield.

To revert briefly to the earlier history of the mine; its first notable achievements were in the American Civil War, when every mine had to be laboriously placed in position with its moorings cut by hand to the required length. Some of these mines were controlled from the shore by electrical means and some operated automatically, but none were used at any great distance from the shore.

Next, in the Russo-Japanese War, there appeared for the first time in warfare the type of mine which was arranged to take its depth automatically at any desired depth below the surface down to about 20 feet, and in any depth of water up to the limit of the length of moorings, which was then from about 50 to 70 fathoms.

Other types of mines, controlled from the shore, may have been used for defensive purposes, but that just described was the one that inflicted at least 90 per cent. of the losses caused to both sides by the submarine mine.

Subsequently, all maritime nations proceeded to arm themselves with this type, nowadays generally known as the non-controlled, moored mine, and it was precisely this type, with a similar tactical purpose and with similar limitations, with which every nation in the War of 1914-1918 commenced operations.

As in previous wars, there were also employed a small proportion of mines controlled electrically from the shore and in all cases within

a mile or two of the coast line, but so small was this proportion compared with the far more generally applicable non-controlled mine that their utility was very limited. It is, therefore, with the non-controlled type that this article is mainly concerned.

Shortly after the outbreak of the war a multitude of inventors turned their minds to the development of variations of the non-controlled type; the majority of the proposals, on the Allied side, being directed against submarines.

The primary British requirement was for a reliable mine of the simple non-controlled pre-war type, but it was not till the autumn of 1917 that the now familiar "H" type was available to supersede the earlier designs which were found to be lamentably inefficient.

Apart from this essential type, the tactical requirements and limitations of submarine mines did not become clear until towards the close of the war, and as a result much time and energy were wasted in the production of designs which actually had no useful tactical purpose or were otherwise impracticable or unnecessary. Among the many propositions which were wholly or partly developed, the following are of passing interest.

One of the earliest proposals was for mining certain German estuaries with a mine which would anchor itself during the ebb tide and proceed with the flood, but, perhaps fortunately, the experimental models drifted to sea and the project was dropped. Scheer, however, mentions this proposal in his memoirs.

Certain scientists, whose normal occupation was to study the migration of fish in the North Sea, reported a resultant northerly set of half a mile a day across the mouths of the German estuaries; there was accordingly prepared a design of mine to creep along the bottom, but although a number were manufactured they were never used.

There were a number of oscillating mines designed to hover below the surface for some selected period up to twenty-four hours, when they would sink; these again were never used. There were mines intended to leave their sinkers after days or weeks with a view to harassing enemy mine-sweepers; there were designs for the same purpose having two, or even three, mines on a special sinker, the second and third taking up their position when their predecessors were swept. It was proposed to have drifting mines hung below imitation submarine's periscopes; others to be hung below driftwood. There was a demand for strings of mines to be run out at speed as a counter to an enemy destroyer attack. There were several systems of connected mines, whose object was to cause a ship to be struck by two or more mines.

There was a magnetic ground mine and an acoustic moored mine, both of British origin and especially intended for use against submarines. There were also the net mines employed in different forms on an immense scale with a great outlay of material and personnel. Finally, there was the Antennæ mine of the Americans, with which the bulk of the Northern Barrage was built.

Of all these war developments, only the net mine, the American mine and the magnetic mine were used and none of them with any pronounced success. Tactically speaking no non-controlled mine at all, except a development of the simple pre-war type, need have been used, but the American Antennæ mine was a very promising attempt to reduce the numbers of mines required when attacking submerged submarines.

The new factors affecting submarine mining which presented themselves in the course of the war were :—

- (a) The submarine as a mine target ;
- (b) The submarine as a minelayer ;
- (c) The protection of the sides of large war vessels against submarine explosions ;
- (d) The development of the paravane.

The tactical results of the first two of these factors were a very large extension of minelaying as an anti-submarine measure, and an extension of aggressive minelaying by means of the minelaying submarine. These two aspects of minelaying will remain as long as the submarine remains.

As regards design, these new factors demand certain developments over the pre-war type of mine. The mine must be re-designed to defeat the paravane and it must be developed to permit of economical use against submerged submarines. Its charge must be increased to deal with better protected vessels as well as for other reasons. Its scope must be widened so that it can be used in far deeper waters than before, and it must be capable of being moored at a sufficient depth to catch the deepest diving submarine.

If these developments can be applied to a single type, there is no need for any other type of mine except for certain special and very limited conditions where controlled mines might be essential, or perhaps in rivers. Such a type requires only to be adapted for laying from submarines as well as from above-water craft, and there exists a universal type suitable for practically every conceivable mining operation in the open sea and even close in shore.

A mine designed to meet the requirements is shown in the accompanying photographs. This is a combination of the well-known "H"

type (with the Herz horn firing device), and the electrical firing device originated in the American naval mines of the war. This latter device depends for its operation upon contact in sea water between either the upper or lower antennæ and the steel hull of a submarine or indeed with any steel, iron or zinc object of quite inconsiderable size. The antennæ have the great advantage that they increase the range of the mine when used against submerged submarines. This makes for economy of numbers and also assists in defeating the paravane.

A method of employing the antennæ mines is shown in the Diagram. This also gives an indication of the resultant economy as compared with the use of single contact mines. The length of moorings is 500 fathoms, and the mine can be rapidly adjusted to moor itself at any depth below the surface from 3 to 300 feet.

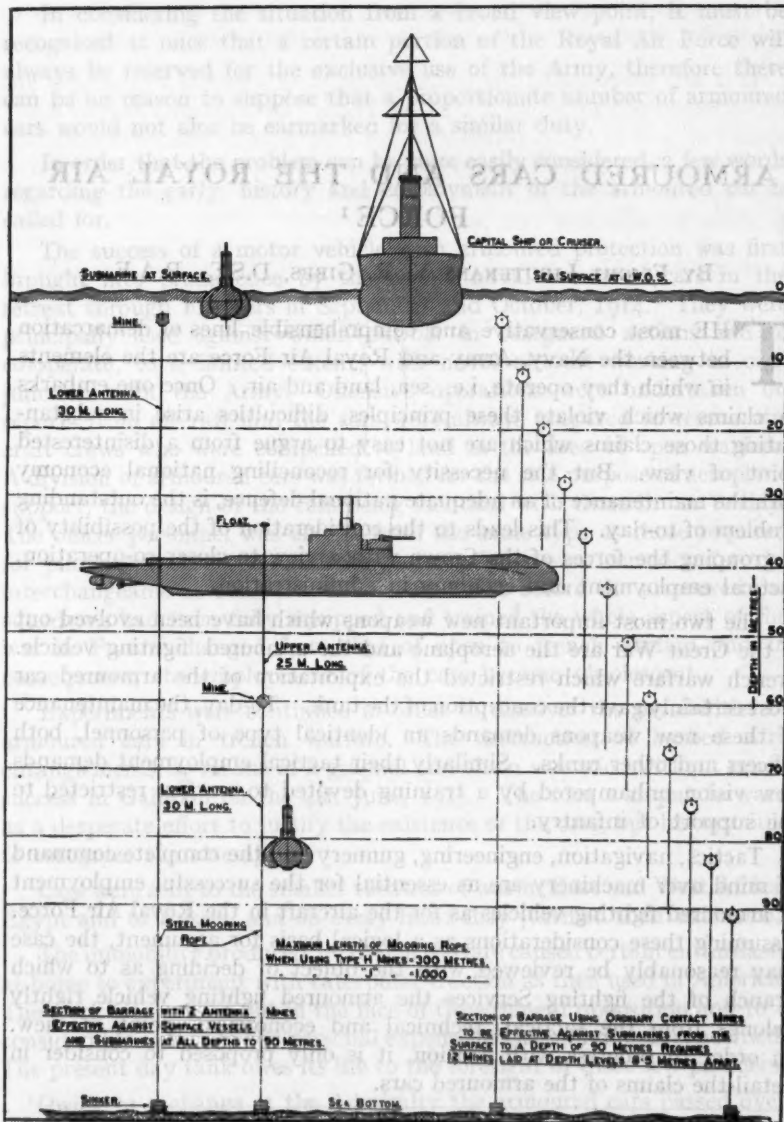
(4) The development of the paravane.

The tactical results of the first two of these factors were a very large extension of mining as an anti-submarine measure, and an extension of aggressive mining by means of the mining submarine. These two aspects of mining will remain as long as the submarine remains.

As regards design, these new factors demand certain developments over the pre-war type of mine. The mine must be designed to defeat the paravane and it must be developed to permit of economical use against submerged submarines. The mine must be adapted to deal with better protected vessels as well as for other reasons. Its scope must be widened so that it can be used in far deeper waters than before and it must be capable of being recovered at a sufficient depth to reach the deepest diving submarines.

If these developments can be applied to a single type, there is no need for any other type of mine except for certain special and very limited operations where controlled mines might be essential or possible in rivers. Such a type requires only to be adapted for laying in submarines as well as from above-water craft, and there exists a universal type suitable for practically every conceivable mining operation in the open sea and even close in shore.

Some mine designs to meet the requirements is shown in the accompanying photographs which are a comparison of the well-known 15 ft.



## ARMoured CARS AND THE ROYAL AIR FORCE<sup>1</sup>

By FLIGHT LIEUTENANT V. R. GIBBS, D.S.C., R.A.F.

**T**HE most conservative and comprehensible lines of demarcation between the Navy, Army and Royal Air Force are the elements in which they operate, i.e., sea, land and air. Once one embarks on claims which violate these principles, difficulties arise in substantiating those claims which are not easy to argue from a disinterested point of view. But the necessity for reconciling national economy with the maintenance of an adequate national defence, is the outstanding problem of to-day. This leads to the consideration of the possibility of re-grouping the forces of the Crown with a view to closer co-operation, tactical employment and economy in administration.

The two most important new weapons which have been evolved out of the Great War are the aeroplane and the armoured fighting vehicle. Trench warfare which restricted the exploitation of the armoured car most certainly gave the conception of the tank. To-day, the maintenance of these new weapons demands an identical type of personnel, both officers and other ranks. Similarly their tactical employment demands new vision unhampered by a training devoted to warfare restricted to the support of infantry.

Tactics, navigation, engineering, gunnery and the complete command of mind over machinery are as essential for the successful employment of armoured fighting vehicles as for the aircraft in the Royal Air Force. Assuming these considerations as a logical basis for argument, the case may reasonably be reviewed with the object of deciding as to which branch of the fighting Services the armoured fighting vehicle rightly belongs from the tactical, technical and economical point of view. In order to progress with caution, it is only proposed to consider in detail the claims of the armoured cars.

<sup>1</sup> The principles advanced in this article are considered by the author to be sound for the Royal Air Force but not necessarily so for the Army. It is realized, too, that the tactical employment of armoured cars with an army in the field is one of growing importance to the Army, and, as such, their complete separation from the Army might be strenuously resisted.

In considering the situation from a broad view point, it must be recognised at once that a certain portion of the Royal Air Force will always be reserved for the exclusive use of the Army, therefore there can be no reason to suppose that a proportionate number of armoured cars would not also be earmarked for a similar duty.

In order that the problem can be more easily considered, a few words regarding the early history and employment of the armoured car is called for.

The success of a motor vehicle with armoured protection was first brought into prominence by the use of naval armoured cars in the retreat through Flanders in September and October, 1914. They were principally used against Uhlan patrols in rearguard actions and to co-operate, to a limited extent, with naval aircraft working in conjunction with the Army. Offensive operations were undertaken on reports from aircraft and the cars were always prepared to rescue aircraft crews who were compelled to land in the area of open warfare. A division of armoured cars was formed for the sole purpose of aeroplane support, the design of the cars being identical with those in use to-day. The officer personnel was chosen from the same type as those required for pilots and observers, and the junior officers were considered to be interchangeable as observers in aircraft. But before the armoured car squadrons had been fully equipped and trained the whole aspect of the war in France changed from that of open to trench warfare, and, in consequence, the employment of the cars became obsolescent.

Experiments were continued in order to discover the possibilities of armoured cars in trench warfare. The destruction of barbed wire entanglements by means of a grapnel and chain was tried without much success in Gallipoli on the 4th June, 1915. The idea was put forward as a desperate effort to justify the existence of the cars, but history fails to recognize the attempt.

Cars were sent to the smaller theatres of war in East and West Africa, Egypt and to Russia, and on every front they justified their existence.

The immobility produced by trench warfare caused certain enthusiasts at home to experiment with caterpillar traction as then used in America. The work was carried out in the face of Government opposition and to a considerable extent at the personal expense of the individuals concerned. The present day tank owes its life to the foresight of those few plodders.

Owing to a change at the Admiralty the armoured cars passed over to the War Office, and from that moment the original idea of their being used as aeroplane support was completely lost sight of, except in Egypt where they were so employed in connection with civil disturbances in the Delta and against the Sennussi in the Western desert. They were

used at a later stage of the war during the advance through Palestine and in the destruction of the 4th Turkish Army in Transjordan.

It is not proposed in the small scope of this article to consider all the opportunities for using a "Petrol Force" of armoured cars in close support of, and in co-operation with, aircraft, such as offered themselves during the War, 1914-1918. One example of a decisive battle in which both weapons were available and in which neither were employed, will be given to illustrate the point.

In June, 1915, it was decided by the Commander-in-Chief that a landing must be made on Gallipoli behind the Turkish lines with a view to consolidating the position of the Army held up at Helles and Anzac. This could be achieved by destroying the Turkish lines of communication. The failure of the attack would mean the evacuation of the Peninsula before winter set in. Suvla Bay presented the most favourable topographical features for the landing. It is a large bay with good beaches and a flat approach into the interior over which armoured cars could travel with ease provided the surface was not broken up by previous heavy traffic. The staff of the Armoured Car Division placed a scheme before Army Headquarters at Imbros. The general outline of the idea was to land one squadron of Rolls Royce cars, two squadrons of armoured motor cycle machine guns and some Ford tenders. These were to be landed immediately in advance of the Army. The armoured force would make a dash inland and establish itself, at intervals, right across the peninsula from shore to shore. Any roads discovered would be explored and a general effort would be made under the cover of darkness to create panic and generally to harrass the movement of the Turkish troops. At dawn the main army was to be landed and the Ford tenders would be available for the purpose of supplying the troops with water and the cars with petrol and ammunition from the dumps as they were established on the beaches. Aircraft were asked for at dawn to keep in close touch with the cars and to give them information regarding the position of the enemy and to indicate suitable targets for armoured car attack. The area was duly reconnoitred from the air, also from a destroyer going close inland, and the scheme was approved as being practical by General Headquarters. By this time the details of the actual landing were vested in the Army Commander and he was told "These (i.e., the cars) will be available to land on the morning after your disembarkation begins, if you so desire"! Action was actually taken to the extent of sending the suggested force up to Suvla Bay in a special ship in the first convoy. But they were never put ashore. The machine guns were sent ashore later, but the idea of using the cars was completely forgotten.

The result of the landing was a complete failure. The element of surprise was lost in the first twenty-four hours and the Turk dug himself into a position against which thousands of infantry were eventually doomed to be hurled in a useless effort to remove him.

It is suggested that the skilful employment of the "Petrol Force"—armoured cars, motor machine guns, Ford vans and aircraft—might have exploited the element of surprise and have achieved a measure of success, where the slow and cumbersome method of a stereotyped landing failed.

Let the student of warfare pause and reflect. What would have been the effect on the whole outlook of the war on all fronts if the landing at Suvla Bay had achieved its aim and the Turks had been forced out of Gallipoli? What opposition would this armoured force have met and what results might have reasonably been expected from it against the opposition? I quote from Mr. Winston Churchill's book, "The World Crisis," 1915-1916:—

"Before daybreak, General Von Sanders, Commander-in-Chief of the Turkish Armies, on the 8th of August mounted his horse and rode to the deployment area of this attack. He wandered about for some time looking vainly for his troops. He passed the day of the 8th August in great anxiety, having still nothing between him and the immense forces of the invader but exhausted and much reduced Gendarmerie. Four hundred men were at one position and three hundred at another, with a gap of five miles between them. All the low intervening ground was unoccupied. That same evening he gave command of all troops in the area to Mustapha Kemal Bey,<sup>1</sup> but the troops were too exhausted to attack before the morning of the 9th August."

All histories and publications on this campaign have failed to record the existence of the armoured cars, ready and waiting in their ship at Suvla Bay on the night of the 7th August, 1915. Nor has the fact been mentioned that their true role was actually visualized and suggested before the war had been in progress for a year.

The question of aerodrome defence from ground attack is one that still requires consideration. An essential for a good aerodrome is open approaches, therefore it is usually sited in such a position as to be liable to attack from any direction. With the present Royal Air Force establishments, the defence of the aerodrome cannot be undertaken, except in emergency, in addition to flying duties. Unless the aerodrome is made secure from ground attack the aircraft cannot guarantee any military co-operation. Normally, security is provided by the Army, but

<sup>1</sup> The present head of the Turkish Empire.

this can only be at the expense of a reduction in the strength of tactical units designed for definite functions with the Army. A suggested system of defence would be with armoured cars which would have the further duty of forming the line of land communications for the squadron. The security of the aerodrome should be vested in one command and that would appear to be that of the Royal Air Force, who are in actual occupation, rather than sub-let to a Service which is fully occupied with broader considerations. The armoured car personnel, when not actually employed in manning their guns, could carry out the greater portion of guard duties as they would be Royal Air Force personnel. Defence against low-flying aircraft attacks could be undertaken by armoured car personnel who would be better acquainted with the performance of aircraft than Army personnel who must change from time to time.

It would appear from the examination of statistics, that a definite economy in personnel, material and supplies might be achieved by employing aircraft and armoured vehicles where hitherto infantry, cavalry and artillery have been used. The following figures are based on War Establishments, 1918:—

A Cavalry Brigade eats 2,300 tons of fodder per month.

A Tank Brigade, working at full pressure, uses an average of 230 tons of petrol, oil, etc., in the same period.

Field Artillery Brigade requires 32.6 men per gun in the field.

Machine Gun Battalion requires 14.5 men per gun in the field.

R.A.F. Squadron requires 13 men per aircraft in the air.

Tank Corps Brigade requires 4 men per tank in the field.

The efficiency of the Royal Air Force in Army co-operation duties is as dependent on the serviceability of its motor transport as on its aircraft. The Squadron commander is therefore forced to give as much attention to his ground transport as to his air units, which necessitates his having a good working knowledge of both. Transportation of fuel, stores, rations, etc., by air transport may eventually be considered on a larger scale, but in view of the possibilities of tank attack, the question of salvage, repair work and lines of communication in open warfare, may force the Royal Air Force to consider armouring its ground transport to resist raiders. The mechanical transport of an average mobile squadron in 1918 was forty-three vehicles, and the transport personnel, exclusive of officers, was twenty-five per cent. of the squadron establishment.

Repair depots for mechanical transport, stores, spares, personnel, machine guns, ammunition, etc., are common to both transport services. A Royal Air Force supply depot could maintain a "Petrol Force" with stores without having to hold more varied items, because, with unity

of design, most parts would become interchangeable. This might have the advantage of making all supply depots more mobile. The personnel would be interchangeable, therefore it follows that reinforcement camps and base depots might be reduced by standardizing the personnel.

Training of the other ranks for all duties, with the armoured vehicles or aircraft, should include engineering, driving, use of compass, map reading, visual signalling, machine guns, camouflage, use of revolver and reconnaissance report writing.

In the Royal Air Force there is the ever recurring problem as to how the temporary unfit and disabled flying personnel can be most profitably and usefully employed. The extension of the responsibilities of the Royal Air Force as briefly outlined in this article offers a possible solution. Flying personnel, being of a mechanical mind, is particularly suitable for training in petrol traction, both in the air and on the ground. It can provide trained machine gunners, who possess initiative and some tactical ability. A knowledge of map reading and the principles of navigation should make this same personnel ideal in the role of an armoured car commander.

Complete co-operation and understanding between the man in the aeroplane and the man in the car would thus be established, and, if the air gunner and car gunner were also made interchangeable, the position would be even more ideal. The advantage of personnel training and living together in the same camp should not be overlooked.

By taking over the armoured cars from the Army and readjusting the Parliamentary vote accordingly, a career is immediately opened for the personnel who, through no fault of their own, are no longer considered fit to fly. In this way, too, the services of expensively trained officers and men could be retained and utilized with greater economy in the duties for which they are already fitted by their Service experience.

## MILITARY MUSICAL RELICS

By J. PAINE.

**I**N the keeping of several British Regiments and in various museums are numerous musical instruments with a story attached to them. If exception is made of a few instruments regarded with veneration because once played by some eminent military musician, the only instruments used in a wind band that, generally speaking, can claim historical interest are those which are obsolete. Valued only for their antiquity, these band instruments may have accompanied the regiment on active service, but the cases are rare, if at all, where they have played a prominent part in the heat of battle. At military displays these almost forgotten relics are sometimes brought to light again, and the twentieth century regimental bandsman appears in the old shako and tunic playing the weird-shaped serpent or some other instrument that has long since had its day.

It is however amongst instruments which have actually been taken into battle that one finds the real trophies. Certain drums and bugles have become almost sacred objects on account of their having been captured from the foe or from having played a conspicuous part on our side in a famous battle. Perhaps the best known of the latter order is the field trumpet carried, if not used, in the immortal charge of the Light Brigade at Balaclava and sold by auction in the late nineties for seven hundred and fifty guineas!<sup>1</sup> It was exhibited at the British Empire Exhibition, Wembley, and may still be seen in the Museum of the R.U.S.I., where one may also see the medals of Trumpet-Major Joy, 17th Lancers, who carried this historic trumpet in the charge. Another much prized relic is the instrument on which the Life Guards' charge at Waterloo was sounded. Suitably mounted on a shield it now reposes in a room of this regiment's quarters. The Household Cavalry still have very elaborate trumpet banners and one that was in use at the

<sup>1</sup> Not to be confused with the bugle carried in the Light Brigade charge by Lord Cardigan's orderly trumpeter, and now in the possession of Mr. James Baker, of Newcastle-on-Tyne. The field trumpet mentioned above was carried by Major-General the Earl of Lucan's orderly trumpeter.

beginning of the last century is in the Whitehall Service museum just referred to, where one may also see a yellow coat worn in 1800 by a trumpeter of the 27th Light Dragoons, a regiment which was disbanded shortly after Waterloo. The silver trumpet which sounded the "Charge" at the conclusion of the musical ride of the 10th Hussars at the Royal Tournament three years ago was the identical instrument purchased with part of the prize money realized from the sale of horses captured by Vivian's Brigade at Waterloo. Another regiment of the same Brigade, the 18th Hussars, have silver trumpets purchased under the same circumstances. This regiment is now linked with the 13th Hussars who presented a fine silver statuette of their kettle drummer to the Chasseurs d'Afrique in memory of Balaclava.

The Life Guards possess kettle drums presented by William IV in 1831, whilst the Royal Horse Guards own a silver pair given in 1805 by George III "as a Testimonial of its Honourable and Military Conduct on all occasions."

Authorities disagree as to when the capture was made of a pair of kettle drums owned for many years by the 3rd Hussars, whose Sergeant kettle drummer wears a silver collar on ceremonial occasions, presented to the regiment in 1772 by the Colonel's wife. The story that these drums were taken at the Battle of Aghrim in the Irish war of 1691 is somewhat at variance with the tale of their capture at Dettingen fifty-two years later. In the latter fight the 7th Dragoon Guards captured from a French cavalry regiment two brass kettle drums which, after many years' exhibition at the Tower of London, eventually came into the regiment's hands once again. The public had the opportunity of seeing them in 1890 at the Royal Military Exhibition, where amongst other regimental musical relics was a bass drum lost by the 7th Hussars at Waterloo.

The R.U.S. Museum has several cavalry drum banners, including the only ones ever presented to a British cavalry regiment by the Sovereign's Consort, the pair given before the Great War to the 19th Hussars by Queen Alexandra. Before taking leave of the cavalry, mention should be made of the Drum Major's staff of the French 66th Regiment captured at Salamanca by the 5th Dragoon Guards, whose Trumpet Major for many years afterwards carried the trophy on ceremonial occasions. The King has recently approved of the re-introduction of the time-honoured title, "Trumpet Major" in place of the less romantic designation, "Sergeant Trumpeter." The same Army Order also abolishes the prosaic term, "Sergeant Drummer" and revives the grand old title, "Drum Major," the mere mention of which recalls many incidents on the field of battle where Drum Majors' staffs have changed hands.

Though not musical instruments, Drum Majors' staffs and sashes are deserving of passing attention in the case of several regiments. These items are relics of the most important military musicians, next to the bandmasters, and as such are worthy of notice. In the R.U.S. Museum one may gaze on the sashes worn by the Drum Majors of the Coldstream Guards<sup>1</sup> in the 'eighties and of the Royal Inniskilling Fusiliers in the 'sixties. One of two French Drum Majors' staffs in this collection was captured by the last-mentioned regiment in the Peninsula. One of the oldest sashes in the museum is that worn in 1810 by the Drum Major of what is now the Leicestershire Regiment. Some years ago the Drum Major's staff of the 2nd King's Shropshire Light Infantry was presented to the same museum. The head, engraved with the Royal Crown and Cypher of Frederick, Duke of York, is an interesting relic of the period when the battalion was known as the 85th or Duke of York's Own Regiment of Light Infantry. The 1st Dorsetshire Regiment, of Plassey fame, is the proud possessor of a Drum Major's staff presented to the regiment by the Nabob of Arcot. On this staff is the figure of an elephant and the date of Clive's victory near Calcutta in 1757, together with the regimental motto, "Primus in Indis," an allusion to the Dorsets having been the first regiment of the Crown employed in India. Tradition has it that the motto appeared on this staff for the first time.

Regarding the arms and uniforms of military musicians of the past, the R.U.S. Museum has a coatee worn by a drummer of the 49th in the 'thirties, also a drummer's sword of that period. Among the coloured prints in this museum are representations of the gaily clad martial minstrels of the days when full dress regalia was so much part and parcel of the soldier's life. Of more modern pictorial interest are the photographs of military bands at the front during the Great War preserved in the Imperial War Museum, in the library of which are the accounts of the recruiting bands raised during those eventful years.

Deserving of particular notice are the drums and Drum Major's staff of the 34th French Infantry captured by our own 34th Regiment (now the Border Regiment) at the Battle of Arroyo des Molinos. When these two regiments met again in the Crimea forty-three years later as allies the British 34th had these drums with them. The Commanding Officer, alive to the possibility of unpleasantness arising if the French discovered

<sup>1</sup> This regiment can furnish the instance of a novel musical instrument playing a great part in modern warfare, the hunting horn with which, at a critical moment on the Somme, "Tally Ho V.C." (Colonel J. V. Campbell, V.C., C.M.G., D.S.O.) rallied his men. Deserving of equal mention is that drum of decidedly non-regulation pattern played at the head of a body of tired-out stragglers by Major (now Lieutenant-General Sir) Tom Bridges of the 4th Dragoon Guards at Le Cateau in 1914.

the fact, sent home for a new set and in the meantime the French drums were whitewashed and shipped home to the depot. These much prized trophies are still in the keeping of the 1st Battalion.

A drum used for many years by what is now the 2nd Royal Ulster Rifles, was captured at Jhansi when the regiment was better known as the 86th or County Down Regiment. The earliest extant evidence of the use of an antelope as the badge of the Warwickshire Regiment is revealed in the design on an old drum owned by the 1st Battalion. This ancient relic was found in a crofter's hut in the Highlands twenty-four years ago, having been missing since "the Forty Five" and probably lost by the regiment at Prestonpans. A kind-hearted German recently returned a side drum lost by the 2nd Argylls at Le Cateau in 1914. The Imperial War Museum, South Kensington, has a few drums and bugles used by the British Expeditionary Force and some coloured drawings of the Guards' bandsmen in full dress uniform. British regimental drums are not confined to our museums and visitors to Brussels should take the opportunity of inspecting what were once our own in the Musée Royal de l'Armée at the Palais du Cinquantenaire.

A Russian tenor drum was captured at the Redan in the Crimea by a drummer of the Camerons who eventually became Drum Major of his regiment and, in the late 'eighties, a guide at Edinburgh Castle. The late General Sir George Higginson, once the oldest General in the Army, served throughout the Crimean War with the Grenadiers and returned home with little in the shape of trophies of war, having "to content myself," to use his own words, "with a drum and some hand grenades." In the photograph which appeared in several newspapers a few years back of this centenarian with his great grandchildren the drum was shown resting on his knee. In this campaign the Royal Fusiliers took the two drums of the Kazan Regiment now owned by the 1st Battalion. Two drums were captured at Alma by a corporal of the Connaught Rangers, another drum being taken at Inkerman by the Drum Major of this regiment.

The last mentioned regiment, the old 88th of Peninsula fame, was disbanded seven years ago and its famous "Jingling Johnny" found a home in the R.U.S. Museum. The Moors used it as a musical instrument and as a rallying colour when engaged in warfare, and felt the loss keenly when a French regiment relieved them of it. It remained with the French for some years prior to the Battle of Salamanca in 1812, when the Connaughts secured it in the charge of Wallace's Brigade. In front of the band this trophy was always borne by the tallest man in the battalion since the stem, surmounted by the Napoleonic eagle, measures over seven feet. At intervals on the stem are crescents from

which hang small brass bells, the original silver bells having been stolen by the natives when the regiment was stationed in India after the Mutiny. This "Chapeau Chinois," as it was termed on the Continent, originally had red dyed horse tails but black horse hair had to be substituted some seventy years back. On two occasions within half a century this "Johnny" had to be sent to Paris for repair. The "Jingling Johnny" in the possession of Major-General Sir William Heneker is the replica, often used by the regiment to save from further damage the original "Johnny." The R.U.S. Museum also has a "Jingling Johnny" of the 3rd West India Regiment (Zouaves). These weird instruments have now been superseded in military bands by glockenspiels.

In the hands of private individuals and in various regimental messes there must be many bugles worth considerably more than their intrinsic value. The most talked of bugle of the British Army in its day is that which bore on a silver plate the following inscription, "Presented to Bugler John Francis Dunn, First Battalion, Royal Dublin Fusiliers, by Queen Victoria to replace the bugle lost by him on the field of battle at Colenso on the 15th December, 1899, when he was wounded." Dunn was fourteen years of age when all Britain was talking of his exploit and is now a steward on a liner. Another much prized trophy is the Russian bugle snatched out of its owner's hand in the Crimean War by Drummer MacGill of the Middlesex Regiment. The captured bugle which bears the crest of the Russian eagles was afterwards presented to the Colonel of the regiment, General Sir George Brown, a well-known martinet in his day. The steadiness of the drummers of the 1st Battalion of this regiment whilst under fire at Albuhera is commemorated in Lady Butler's painting, "Steady, The Drums and Fifes," now hanging in the officers' mess.

Worthy of preservation for all time is the bugle of Bugler Hawthorne, V.C., the old soldier who repeatedly sounded the "advance" at the storming of the Cashmere Gate in the Mutiny. This gallant member of that famous explosion party belonged to the Oxfordshire and Buckinghamshire Light Infantry, a regiment which in later years numbered amongst its officers Major C. R. Day, whose death in the Boer War robbed the country of a great authority on musical instruments and their history. There are several German bugles taken during the late war in this regiment's depot museum. One trusts that the dozen silver bugles lost by the 1st K.O.Y.L.I. during the Great War will eventually be discovered. The appropriate title, "The Bugle," is used for the journal of this regiment. Under the Army Order previously referred to, Light Infantry and Rifle Regiments will use, as of old, the term "Bugle Major" in lieu of "Sergeant Bugler," whilst

in Scottish regiments "Pipe Major" will take the place of the unpopular designation of "Sergeant Piper."

North of the Tweed the most prized of military musical relics are naturally the sets of pipes, wherever they may be, once owned by pipers who distinguished themselves in some way on active service aided by the powers of their beloved instruments. What a famous relic is that bagpipe played by Piper Mackay of the Camerons outside the square at Quatre Bras! The pipes which helped the wounded Piper Findlater of the Gordons to win the Victoria Cross at Dargai should be honourably preserved alongside those other sets which, under similar circumstances, helped to gain for their players the same coveted decoration during the late war.

Musical relics of the Royal Artillery may be found in various museums, such as the brass fife case used in the R.A. band in the 'thirties, now in the R.U.S. Museum; also Handel's letter in the British Museum asking for the loan of the regiment's kettle drums from Woolwich for the production of his oratorio, "The Messiah." A kettle drum in the R.A. Rotunda Museum at Woolwich weighs five hundred pounds and, before the Revolution, was used in the organ accompaniment in Strasbourg Cathedral during military musical selections. When on the march, a necessary part of the establishment of the Artillery train in the days of William III was a horse-drawn vehicle somewhat resembling a chariot on which were mounted a pair of kettle drums. A pair of crimson artillery kettle drum banners richly embroidered in gold and silver and in excellent condition may be seen in Woolwich Royal Arsenal. They accompanied the Train in Flanders in 1691, were used in Marlborough's funeral procession and are the oldest existing drum banners in this country. The R.A. Institution, Woolwich, has William the Fourth's gifts to the R.A. Band in the shape of two tympani orchestral drums, also a side drum presented to the band by the Earl of Chatham just a century and a quarter ago.

Interesting souvenirs of our so-called little wars may be found among the war trumpets used by various savage races and now housed within the walls of the R.U.S. Museum. One trumpet from the Sandwich Islands is made from human bone, another from the same clime is wrought in shell strengthened with human hair, whilst bamboo is utilized in the making of one picked up in the Torres Straits. Two trumpets taken in the Ashanti War of 1824 are adapted elephant tusks, one being covered with fish skin. There are others from Abyssinia, West Africa, and the Sudan, two of the last-mentioned being of ivory mounted in fancy leather given to the museum by Lady Gatacre, who also presented a musical instrument secured at the taking of Khartum in 1898. This

had originally belonged to that Army of Hicks Pasha which war annihilated in the Sudan sixteen years beforehand.

Many of the native war drums in this same museum were secured in similar circumstances to the trumpets just enumerated. Among the Ashanti drums are two taken in the campaign of the early 'seventies presented to the Institution by Field Marshal Viscount Wolseley, and two others brought from the Sacrifice Palace of King Prempeh by Colonel Sir Francis Scott's expedition of 1896. One of the latter, a gruesome relic with its decorations of skulls and human bones, was deposited by Lieut.-General Lord Baden-Powell who, as a staff officer, accompanied the expedition. The pair of Afghan kettle drums were taken at Kandahar in 1880. Two Dervish drums have their companions in a pair of camel drums once owned by the Emir who was killed at the Atbara in 1898, and in two others taken at Omdurman in that year. The Turco-Russian War of 1877 is represented by a Russian side drum picked up on the Shipka Pass. Some of the Central African war drums are headed with raw-hide and hollowed from blocks of wood and tree trunks. There are others from China, Hawaii, the Hervey Islands and New Caledonia. In the Horniman and other Museums will be found drums once used by various savage races.

Many musical enthusiasts after perusing these notes would hasten to suggest that all these relics be brought together and housed in a suitably chosen public building. Such an exhibition would, without doubt, be well patronised if held temporarily, but for permanent display military men would prefer that certain of these relics and hard won trophies remain with the regiments, and, after all, this is as it should be.

## THE SETTLEMENT OF SOLDIERS IN CIVILIAN LIFE

BY CAPTAIN T. B. GRAVELY, Royal Corps of Signals.

**T**HE problem of settling soldiers into civilian employment on completion of their colour service is acquiring increasing importance in these days of trade depression and widespread unemployment.

The training of the soldier of the present day is based on the twofold object of fitting him for the work he is called upon to perform during his military career, while improving his general education, cultivating self-respect and inculcating principles of sportsmanship. Such a training should in theory, and undoubtedly does in practice, produce in most cases a man who is substantially better equipped for the duties and responsibilities of a citizen of the Empire than another who has not had the same advantages. Unfortunately, on leaving the service the ex-soldier may find himself competing with younger men who are prepared to learn a trade at a lower wage or men of his own age who have been at a trade while he has been in the service and are therefore considered more skilled. For this, and other reasons to be mentioned later, the ex-soldier frequently finds the dice heavily loaded against him in the race for employment. It is probable that knowledge of these facts deprives the Army of many good recruits; it certainly weighs heavily with many men when deciding whether or not they should extend their service and thereby lose ground in the matter of age. In any case the ultimate fate of men who have served their country well, and in many cases risen to positions of responsibility in the service, must be a source of anxiety to both their immediate superiors and the higher authorities. That this is realized is evident from official interest in the subject. The problem is—What more can the Army do to help men discharged or transferred to the Reserve and what part of the organization which looks after the welfare of the soldier during his period of service with the colours is in the best position to provide such assistance? As regards what can be done: it is not proposed to deal with functions of the Regimental and other Associations which watch over the interests of

the ex-soldier in civil life, but rather to concentrate on the help and encouragement that can be given to a soldier during his colour service, that is up to the time when he is discharged or transferred to the Reserve and direct touch with him is lost.

To begin with, it would be well to examine some of the types of men which have to be considered. These may be roughly divided into three classes :—

- (1) Those who have had some training (say four years) in a trade before enlistment and have thus established a civilian connection ;
- (2) Those who have had no definite experience in any particular trade prior to enlistment and have been either "rolling stones" or classed under the very general category of "labourer" ;
- (3) Those who have done no work in civil life, i.e., boy enlistments or those who were practically unemployed from the date of leaving school to date of enlistment.

Any of these three classes may have been taught a trade in the Army and be graded according to the Army standard of efficiency which they have attained.

Class 1 is the easiest to deal with, provided the inclusion of the individual falling into that class is really justified. The information available at the time of a man's discharge regarding his previous experience in civil life consists of a bald statement as to previous occupation on his attestation paper, and possibly, a certificate of character from his last employer. The former is entered as the result of a statement made by the man himself at the time of enlistment, and the trade he desires to take up on discharge or transfer to the Reserve can only be ascertained from the same source. The effect of this is to render it extremely difficult to determine the category in which a man should be classed, and, unless the greatest care is taken to assess a man's capabilities during his period of service, he may be launched into civil life under false colours, and may desire, and even obtain, employment in an occupation for which he is mentally or physically unfitted. The inevitable result is that he is dismissed and the employment of ex-service men in general is discredited in the eyes of the employer. This fact is not the least of the difficulties, mentioned above, which go to hamper the ex-soldier in his search for employment. The officer charged with the duty of filling in a man's Employment Sheet or Discharge Certificate is thus faced with a very serious duty, namely that of giving the man every possible chance in civil life, while at the same time, acting fairly by a prospective employer or his Regimental Association, as the case

may be. It is difficult to ensure uniformity however stringent the regulations on the subject.

Class 2 is probably the largest, especially in non-technical corps, and it is the assistance of this and Class 3 which constitutes the primary function of the Vocational Training Centres, whose aid is of such value to the small proportion who are able to take advantage of it.

Class 3 is, in some respects, more difficult to deal with, especially in the case of boy enlistments, because it includes a large proportion of the men who have nothing but an Army qualification as proof of their fitness for employment in civil life.

An Army trade rating is a valuable asset provided the prospective employer fully understands the tests on which it is granted and the standard of comparison with degrees of proficiency in civil life. It is also necessary that employers should have faith in the value of an Army qualification as a certain indication of efficiency up to known Army standards. This can only be assured by a rigid enforcement of trade tests and prompt disrating for carelessness or inefficiency. There is no doubt that even a small amount of negligence or inaccuracy in this direction may have far-reaching effects when the suitability of an ex-soldier for a particular job is being weighed in the balance against another man. It must be remembered that there are certain trades which, though essential to the Army, have a limited and decreasing demand in civil life, e.g., linemen, farriers, armourers.

It is generally accepted that the longer colour service a man has to his credit, the less effort will he make on his own initiative to obtain employment before the time comes for him to take his discharge. This is particularly true of men who have served twenty-one years or over with the colours. In many cases they do not appear to realize that they have, at last, to leave the service which has been their home for so long; they consequently adopt a fatalistic attitude towards the future. It is such men who deserve the greatest consideration and assistance in view of the limited scope that exists in civil life for men of their age, in spite of the responsible positions they may be holding in the Service before discharge.

In view of what has been said above, it is clear that the Army can assist the individual during his colour service in the following ways:—

(a) By insuring that efforts to obtain employment, either direct or through some recognised channel such as a Regimental Association or Vocational Training Centre, are commenced in sufficient time to offer a reasonable prospect of employment being available on, or about, the date of discharge;

(b) By taking care that, as far as it is possible to prevent it, the individual man does not leave the Service as a "square peg" looking for a "round hole"—in other words that, while he is under direct Army control he does not attempt to obtain employment for which he is obviously unfitted and thus prejudice the chances of others ;

(c) Enforcement of trade testing regulations and authorised forfeitures of tradesmen's pay in order to maintain the standard of Service tradesmen. It is thus advisable to employ a tradesman at his trade as far as possible during the last year of his service, in order that he may not lose his skill through temporary employment in stables or cookhouse immediately before discharge. This applies particularly to men sent home from abroad with a short period of unexpired colour service ;

(d) By putting before the man the facts regarding the chances of employment in any selected trade or occupation either at home or abroad, as far as they can be ascertained, and the advantages of Empire settlement ;

(e) By providing information regarding conditions of life in the Colonies and Dominions and the cost of emigration.

Much is already being carried out by means of Regimental Associations and other organizations, but it is certain that none of these bodies can have the same influence over the individual as the Regimental Officers with whom he is actually associated prior to his discharge or transfer to the Reserve. On the other hand, the regimental officer is so absorbed in purely military duties that it would be useless to expect him to carry out this additional task without outside assistance.

Having considered the broad lines of what might be done, it is necessary to tackle the question of how it can be carried out and who should undertake the work. In arriving at the scheme outlined below the following have been assumed as basic facts :—

(1) That the only man who can effectually deal direct with the individual is the company, or equivalent, commander under whom he is serving ;

(2) That, generally speaking, the company commander is not, at present, in a position to obtain the information necessary to advise the soldier and that this cannot be obtained without the expenditure of time and labour, which it would be difficult, if not impossible, for the Company Commander to undertake ;

(3) That a scheme of this nature, in order to be of real value to the Army as a whole, must be designed as far as possible to meet the difficulties of the man who becomes due for discharge or transfer while on

foreign service and is therefore out of touch with conditions at home. Cases of this nature are further complicated by the fact that the actual discharge is carried out by officers of the Depot, or other home unit, who are neither so well acquainted with the individual nor so interested in his future as the Officers under whom he has served for a longer period.

Taking the above facts into account the following is put forward as the basis of a possible scheme :—

(i) That a register be kept by commanders of companies, or of equivalent units, indexed alphabetically, and treated as a confidential document. Such register to contain the following particulars in respect of each man :

- (i) Number, name, rank, age on enlistment and date ;
- (ii) Trade or occupation prior to enlistment and actual experience in that trade, with names and addresses of employers. This information should be obtained by means of careful questioning by the officer making the first entry ;
- (iii) Trade or occupation in which employment is desired on completion of colour service. Such items may be entered up at any time and should be finally confirmed when the soldier enters upon his last year of service ;
- (iv) Whether the soldier is willing to emigrate, and, if so, country preferred ; if not, district in which employment is desired at home ;
- (v) Any special firm, Government Department or local authority under whom the individual wishes to be employed ;
- (vi) Company commander's remarks as to the man's fitness or otherwise for the trade selected ; recorded as the result of personal knowledge and observation ; any special attributes or qualifications to be noted ;
- (vii) In the case of Army tradesmen only : detailed remarks as to the degree of proficiency attained, to amplify the information contained in the man's documents ;
- (viii) Details of steps taken to date towards obtaining employment—  
(a) By the man himself—(b) By the unit ;
- (ix) Details of employment, if any, obtained on discharge.

It should be noted that the information contained in this register is intended to be additional to the details regarding character, employment and educational standard already contained in a man's documents. Further, it is suggested that this register might be in loose leaf form, one sheet per man, the sheets being handed on when a transfer takes

place. By this means the clerical labour involved in making extracts would be avoided. The risk of loss in transit is not great and the making out of a new sheet a comparatively simple matter. The sheets of men sent home for discharge would probably require to be sent in advance to allow time for action by the home unit.

In the case of recruits, the information under (i) and (ii) might be completed by the recruiting officer, thus relieving the unit of the task.

(2) In addition to the above, a non-confidential register might be kept in the form of a calendar showing the date on which each man enters on his last year of service.

(3) In order that Company Commanders may be in a position to assist their men with reliable information regarding the possibilities and conditions of employment both at home and abroad, and also to assist Regimental Associations, some form of "Enquiry Bureau" appears to be necessary. It is suggested that a special branch be formed in one of the Departments of the War Office and also at Army Headquarters, India, whose duty it would be to keep in touch with the various authorities outside the Service and provide information to regimental officers and Regimental Associations on demand and by means of periodical circulars; in smaller Commands additional personnel might not be justified. These branches of the Staff would require to keep close touch with the supply and demand in the various classes of employment, especially those open to men of long service and also the terms and conditions governing emigration.

To ensure continuity, officers charged with the duty should, if possible, be retired officers with a small clerical staff. These officers should work in close co-operation with each other and the officers in the smaller commands abroad, who would be responsible for the work in their area. In order to obviate delay and "post officing" it is suggested that the usual channels of communication be waived in this instance and company commanders be permitted to correspond direct with the War Office and Army H.Q. India on this subject. By means of a system of this nature, equal facilities for obtaining information would be available to all officers directly in command of troops, and the regimental officer, when asked for advice and assistance, would not be faced by the problem of how to initiate the whole business.

It may be argued that in a large unit, such as a Battalion, the procedure outlined above short-circuits both the commanding officer, who in the long run is responsible for his men, and the second-in-command who is responsible under the C.O. Against this it is urged that a company basis ensures free and adequate distribution of information and avoids waste of time, and small units are less likely to be

neglected, especially those abroad. Moreover, after all is said and done, responsibility still rests with the senior officers to see that advantage is taken of the facilities provided. This could be ensured by an arrangement whereby the second-in-command sees and initials each man's register sheet prior to discharge.

(4) To ensure that, in the case of a tradesman or of a soldier claiming previous experience in a trade, prospective employers are given more information than the fact that the man in question is "a clean soldier, honest, sober and reliable," it is suggested that a proficiency test might be carried out by an impartial body such as a Vocational Training Centre, or a local firm of standing, and a report attached to the man's discharge certificate. This course might not be necessary in all cases, but it might prove a source of great assistance to all concerned if facilities were provided for the institution of a trade test which would carry weight outside the Service.

In conclusion, mention must be made of the important question of Empire settlement. The soldier, by virtue of his training and experience, should, and undoubtedly does, make a good Empire builder provided he can be persuaded of the advantages of emigration. It is suggested that lectures on the chances of employment and conditions of life in the outlying portions of the Empire should be given as frequently as possible and that they should be open to soldiers' wives. Alternatively the wives might be given special lectures on the subject. Again, much is done to foster interest and understanding between the Dominions and the Imperial Forces by exchange of officers. Would it not be possible to extend this system to Warrant Officers and N.C.O's? By this method men wishing to emigrate would have a more ready means of obtaining first hand information regarding the country they are interested in.

Presumably questions of finance would preclude the granting of cheap furlough passages from India to Australia, but a few such might be of value in spreading knowledge of the country and its possibilities and encouraging men to settle when due for discharge from the Army in India.

## BRUSILOV

(Being a review of the "*Mémoires du Général Broussilov, Guerre 1914-18*"—  
Translation into French from the Russian, with a preface by General Niessel)

By COLONEL A. P. WAVELL, C.M.G., M.C.

"**B**RUSILOV'S offensive" of June, 1916, is one of the landmarks of the War. Its sudden and startling success raised hopes that the Russian steam-roller, after its long movement in reverse during the previous year, was at long last going to drive its ponderous bulk forward over all its enemies. These hopes of a Russian revival which would lead to a speedy victory of the Allies were, as we know, illusory. Within a year Russia had utterly collapsed and had ceased to count—a collapse as startling (except to the closest observers) and almost as sudden as had been Brusilov's success.

Though its end was failure and disappointment, the operation which bears Brusilov's name was, in its immediate results, one of the most fruitful victories of the War. It stopped short the Austrian attack on Italy, cost Austria nearly half a million prisoners, diverted Germany's main effort for a while to plugging the breach her ally's weakness had brought about on the Eastern front, caused the fall of von Falkenhayn, and brought Rumania into the war.

To the average military student the name of Brusilov has remained as a label tied to that particular operation. The personality of the man and his career have received little publicity and are still somewhat of a mystery, even to the students of the Russian campaign. The volumes of that close observer of the Russian army in the war, General Knox,<sup>1</sup> reveal less of Brusilov's personality than of any other of the leading Russian generals. Brusilov was probably less expansive and kept himself to himself more than the average Russian. The writer remembers him on Russian manœuvres in 1913, when he was commander of the XIIth Corps, and remembers being struck by the way he differed from the majority of Russians. He seemed leaner, sparer, more reserved. His reputation then stood very high and it was one of the few reputations in the Russian Army that survived the shock of the war. From August,

<sup>1</sup> "With the Russian Army, 1914-18." Major-General Sir A. Knox.

1914, almost up till the final dissolution of the Russian armies three years later, he held high command without disaster, almost without defeat. Without question he was the most successful of the principal Russian commanders. Is he then entitled to be considered an outstanding leader of troops, one who achieved surprising results with forces quite inadequately equipped or trained for modern war, and who with better equipped troops and proper opportunity might have ranked high among the great captains? Or was he, as some say, merely fortunate in that the armies he led were opposed mainly to Austrians and not to Germans?

It is the chief merit of these memoirs that they give us some insight into the character and views of Brusilov and of the other Russian commanders. Their historical value is limited by the fact that they have been written from memory, without documents, at a considerable distance in time from the events recorded. They do not pretend therefore, as Brusilov states in his preface, to be a detailed description of the course of events. But he claims that they give a faithful picture of his personal impressions of the war, of conditions in the Russian Army, and of the psychology and characters of its leaders.

As everyone who has dealt with historical evidence knows, personal impressions of any action or event written some time later are, quite inevitably, coloured by knowledge subsequently acquired, even in the mind of the frankest and most honest recorder. In the absence of supporting documents then, this fact must be remembered when reading Brusilov's account of his own views at any given period of the war, or of his plans and intentions. As an instance, he complains of the lack of tanks in the Russian army during the reorganization in the winter of 1915-16—that is, some nine months before tanks first appeared in any theatre of war. The whole tone, too, of his account of events is so much in the nature of a vindication of his own actions and judgments that one feels there must often be another side of the story to be heard.

Particularly is this so with Brusilov's pronouncements on his fellow commanders, which certainly do not err on the side of charity. In fact, the Grand Duke Nicholas is practically the only general to win his whole-hearted approval. He says of him: "He was quite devoted to the profession of arms, of which he had a practical and theoretical knowledge. By reason of his high rank and membership of the Imperial family, he had not studied hard, especially in his youth. His nature was fierce and impetuous, but, with maturer age, he had become calm and balanced. The troops had confidence in him, liked him and feared him. All knew that his orders had to be executed precisely, that they would not be modified and that no hesitation in carrying them out would be permitted." Brusilov regards the Grand Duke's removal from the chief command as

disastrous for Russia. "The impression produced on the troops by this change was most painful, one can even say demoralising. The entire army and the whole of Russia had absolute confidence in Nicolas Nicolaievich; one could truly call him a national leader. He had faults, even great faults, but they were largely outweighed by his qualities as a great commander."

Brusilov's picture of the Tsar, on the other hand, is marked by dislike and contempt. Not only, he says, did the Tsar understand nothing of military matters, but he cut a very poor figure before the troops at inspections or presentations of rewards. His role as Commander-in-Chief at G.H.Q. was confined solely to listening to a daily report from the Chief of the Staff, Alexeiev: and in sheer boredom he frequently absented himself for long periods from G.H.Q. on visits to his family or aimless tours of the country. Alexeiev, who was thus virtually Commander-in-Chief, was, Brusilov says, intelligent, but lacking in character.

Of his immediate superior during the early part of the war, Ivanov, the Commander of the South-Western group of armies, Brusilov has little good to say. He seems to have despised him as a leader and disliked and distrusted him as a man. He says he was a timid and undecided Commander—which probably is true—and also attributes to him a quality of intrigue and insincerity, which are quite foreign to what is generally known of Ivanov's character. Certainly Brusilov's relations with him were not friendly, and Brusilov's account of them do not make pleasant reading.

Brusilov seems to have been equally unhappy in his relations with his fellow army commanders in the early part of the war and with his colleagues in high command later on, after he had succeeded Ivanov as commander of the South-Western front. Thus he seems to have been jealous and suspicious of Ruzski, commander of the Third Army (see pages 38-39); and definitely accuses Evert, commander of the Western front, of neglecting to support his successful offensive through personal jealousy (page 212). His opinion of Kuropatkin, commander of the North-Western front, is equally unflattering. He asserts, by the way, that the Grand Duke Nicholas would never have employed either Evert or Kuropatkin in high command (page 239). Whatever the truth of all these allegations, it is obvious from Brusilov's book that there was little whole-hearted co-operation between the high Russian commanders, and that after the departure of the Grand Duke Nicholas neither the Tsar nor Alexeiev had the influence or character to make them pull together as a team. In this respect these memoirs throw considerable light on one cause of the Russian failure.

Brusilov's account of the genesis, preparation and execution of his famous offensive, is naturally one of the most interesting parts of the book. According to his account, at a conference on the plan of campaign for 1916 held at the Stavka (Russian G.H.Q.) at the beginning of April, his group of armies were given a purely defensive role, the main offensive being designed to take place on the Western and North-Western fronts. He expressed, however, his wish to prepare and to carry out an offensive on the South-Western front at the same time, even though he was warned that he could expect no additions in heavy artillery or other troops to his existing resources. Instead of concentrating on one point of attack, Brusilov ordered each of his four Army Commanders to prepare a section of attack, hoping thus to keep his enemy in doubt and to surprise him. This, he says, was the only real novelty in his plan.

Some of the most striking pages of the book are those which give Brusilov's account of the conditions under which his attack was launched. Towards the end of May, Alexeiev informed him that the Italian defeat necessitated some action to take off Austrian pressure, and enquired when the attack on the South-Western front could be made. Brusilov replied that all his preparations were made and only a week's notice was required. It was decided that the attack should begin on 4th June on the formal understanding, according to Brusilov, that the main attack on the Western front began on 14th June. Late on the evening of 3rd June, Brusilov says, Alexeiev called him to the telephone and told him that the Commander-in-Chief, i.e., the Tsar, doubted the success of Brusilov's plan of a number of attacks at widely separated points, and desired him to postpone his attack for a few days and to concentrate all his resources at one point of attack. Brusilov formally refused this eleventh hour change of plan, and as the Tsar had retired to sleep, Alexeiev finally gave reluctant consent to the original plan. If this story is true, it throws a curious light on the working of Russian G.H.Q.

Brusilov attributes the refusals of Evert and Kuropatkin to carry out in time the original attacks planned on the Western and North-Western fronts to incompetence and jealousy. He apparently even went so far as to pay some heed to suggestions of treachery on the part of Evert. (See page 230). He says that Alexeiev, having been their subordinate in the Russo-Japanese War, was dominated by them. He complains that he was thus deserted, since the enemy was left free to concentrate against him, while the transport of reinforcements to him from the other Russian armies, was slow and inadequate. For the futile loss of life in the many attempts to take Kovel, which marred the later stages of his operations, Brusilov blames the policy of G.H.Q., the hesitation of the Commander of the Third Army, Kaledin, and the

incompetence of Bezobrazov, the Commander of the Russian Guard Army. There is no doubt that the Russian G.H.Q. quite failed to use Brusilov's initial victory, and that the magnificent force of Guards was thrown away largely by bad leading. But the truth really is that the comparatively ill-trained and ill-equipped Russians, while more than a match for an equal force of Austrians, were quite helpless before even an inferior German force. So that as soon as an adequate German patch had been inserted into the torn portion of the front, further Russian advance ceased.

Of the Revolution Brusilov has little new to tell us. He claims to have recognised at an early date that no further offensive action by the Russian army could be expected, and he apparently accepted the post of Commander-in-Chief in May, 1917, with no better hope than that of holding the army together for a little longer. He was dismissed by Kerenski some three months later, and was succeeded by the brave but impetuous Kornilov, who attempted a *coup d'état* with disastrous results.

The book ends with Brusilov's departure from the Army. He indicates that he contemplated a second volume, to relate his experiences under Bolshevik rule—he remained in Russia up till his death in 1926—but whether this was ever completed and will be published is not known.

These memoirs still leave Brusilov somewhat of an enigma. He seems to have been a shrewd and capable leader, a man of considerable force of character and genuinely patriotic. But he must, on his own showing, have been a difficult subordinate and a suspicious and jealous colleague. His frequent disclaimers of all personal ambition are not altogether convincing. Neither can his narrative be regarded as unimpeachable from the historical point of view, but it is most interesting in the impressions it affords of some of the leading Russian commanders, and of conditions in the Russian Armies.

## THE INTERNATIONAL SITUATION

### ANOTHER NAVAL CONFERENCE

*"In the event of any conflict, Britain's Navy is Britain itself. We are a people of the sea and the sea is our security and our safety . . . there are risks in peace, . . . the assumption made between one nation and another that they are to conduct their affairs in sincerity and in justice does lay the believing nations open to a certain amount of risk. I will take that risk."*—The Prime Minister, 11th October, 1929.

*"I would rather have said to the United States, or indeed any other country:— 'Build what you will and let us build what we must.'"*—Lord Lloyd, 21st October, 1929.

ON 4th October, Mr. Ramsay MacDonald landed at New York, having crossed the Atlantic in the s.s. "Berengaria." He then proceeded to Washington and entered into prolonged conversations with Mr. Hoover, one of the main topics being the reduction of naval armaments.

The relations between the British Premier and the President of the United States are reported to have been most cordial. Following the earlier negotiations, mentioned in the August JOURNAL, the points at issue between the Governments of the two countries in respect of their navies, have been further narrowed down. It was mutually agreed, therefore, that the time was ripe for a new naval conference between the five principal Sea Powers. It was also agreed that Great Britain should send out the formal invitations to take part in such a conference, and that it should be held in London in the third week of January, 1930.

### THE BRITISH NOTE

Invitations were duly despatched to the United States, France, Italy and Japan on 7th October.

The Note began by enumerating the points on which the Governments of Great Britain and the United States have come to a preliminary understanding. These are in effect :—

- (1) That the negotiations are the direct outcome of the Treaty for the Renunciation of War (Kellogg Pact) signed in Paris in August, 1928.

- (2) The principle of parity as between the naval forces of the United States and those of the British Empire as a whole will, in future, apply to all classes of warships not already covered by the Washington Treaty, and shall be effective by 31st December, 1936.
- (3) The question will be raised of revising the life of battleships and the replacement programme.
- (4) Both Governments are of opinion that the submarine should be abolished entirely, but realise that this cannot be done without the consent of all the Powers concerned.

It is the object of the conference that agreement shall be reached in respect of those categories of warships not included in the Washington Treaty, and also that it shall forestall the conference due to be held eight years after that Treaty to review its effect in the light of technical and scientific developments. The hope is expressed that, without waiting for the actual meeting, the Governments invited will immediately proceed to an exchange of views on the questions raised. Lastly, it is the desire so to shape the work of the Conference as to facilitate the task of the League of Nations in dealing with the whole problem of disarmament.

#### GENERAL ACCEPTANCE

Acceptance of this invitation was a foregone conclusion so far as the United States was concerned, and favourable replies were received without delay from the other three Powers.

**JAPAN'S REPLY.**—Expressing readiness to participate in the Conference, the Japanese Note said that the Government was looking forward with keen interest to the British proposals as to the subjects to be discussed at the Conference; they, in turn hoped to be able to submit their observations in the course of preliminary conversations.

**THE FRENCH REPLY.**—While accepting the invitation, the French reply, which is a long one, refers to the fact that "the principles which have never ceased to guide French policy, both as regards the general conditions of the problem of limiting armaments and as regards the special conditions of the problem of limiting armaments at sea, have been too often defined . . . to need repetition."

**ITALY'S ACTION.**—In accepting the invitation the hope is expressed by the Italian Government that the British initiative will result in real progress.

Following a proposal to the French Government by Italy, a preliminary discussion is to take place between the two countries on naval questions which specially affect them.

## THE NAVAL POSITION AS IT STANDS

The naval problems of to-day are mainly the outcome of a general desire amongst the nations to reduce armaments in the interests of economy and peace and of the aspirations of the United States to possess a navy "second to none." They are also the natural inheritance of the Washington Treaty of 1922 which left the question of relative strengths in cruisers and lesser auxiliaries undefined.

Agreement was reached by that Treaty as between Britain, U.S.A., Japan, France and Italy in regard to tonnage in capital ships, and aircraft carriers of over 10,000 tons; the ratios being, respectively, 5 : 5 : 3 : 1.67 : 1.67. It was also agreed that individual capital ships should not exceed 35,000 tons, or mount guns greater than 16-inch.

No limitations were imposed in regard to the number of lesser warships which each nation might build, but cruisers were not to exceed 10,000 tons or mount guns of over 8-inch calibre.

As regards battleships, Britain, U.S.A. and Japan now have their full quota, but France and Italy are below their permissible tonnage and show no inclination to make good the deficiency.

Britain, in view of her world-wide naval responsibilities, needs a large number of cruisers,—stated officially, until recently, to be seventy to seventy-five,—but would be content to build no more 10,000 ton ships and rely mainly on ships of 7,500 tons armed with 6-inch guns, provided other nations agreed to do the same. But remembering Coronel and the Falklands, clearly we cannot risk our cruiser forces being at the mercy of more powerful enemy ships.

The United States has a considerable shortage in cruisers of all classes as compared with Britain and claims that, owing to lack of bases, it is essential for her to build the 10,000 ton type. The need for more cruisers is explained by the growth of American shipping—largely an artificial product; but must be attributed chiefly to the desire for "parity."

Japan desires a higher ratio than 3 : 5 in cruisers by virtue of her position as an Island Power, largely dependent on sea transport. A figure representing 70 per cent. of the strongest naval power is suggested.

France was the least satisfied nation after the Washington Conference; her national pride being hurt by being placed on an equality with Italy, although, in point of fact, she has not as yet taken advantage of her full quota in capital ships or aircraft carriers. At that conference she entirely refused to accept any restrictions in regard to submarines, and there is no doubt that at the forthcoming meeting she will be equally

obdurate in resisting the suggestion that they should be abolished. Her eyes turn always to her ambitious neighbour in the Mediterranean and she contends that, unlike the latter, she has to be secure in two seas and is therefore compelled to divide her forces. She further holds persistently to the view that naval disarmament must be associated first of all with security and therefore with the reduction of armies and air forces.

Italy is disinclined to accept second place to any European continental nation. On the occasion of the introduction of this year's naval estimates into the Chamber, a Deputy expressed the opinion that whereas the Atlantic was a source of traffic and life (to France) in time of war, the Mediterranean was a perpetual trap; and that Italy had a second naval front owing to an "unjust peace" having left the Dalmatian Archipelago in foreign hands.

So far as the British Government are concerned, it is alleged that they are prepared to accept a reduction of cruiser strength to 339,000 tons, made up of fifty ships, of which fifteen only shall be of 10,000 tons and armed with 8-inch guns; this is however contingent on the United States agreeing to build not more than eighteen and Japan not more than twelve such ships. The extraordinary concession which this implies, not to say the grave risk to Imperial security which it may involve, must be obvious.

It is fair to say that Mr. MacDonald seems to have planted the seeds of a better understanding in America of the magnitude of British naval responsibility, and, if the Conference is to meet with any measure of success, it must be through a growing appreciation in that country of the fact that "parity" in sea power cannot be measured by applying a "yardstick" to each ship in the respective navies,—ton for ton, gun for gun; but that it must produce real equality in security of maritime rights and national interests on and over the seas, under two very different sets of geographical conditions.

### EGYPT AND PALESTINE

BY MAJOR E. W. POLSON NEWMAN, B.A., F.R.G.S.

**A**LTHOUGH Egypt is essentially an African territory while Palestine belongs to that area of Asia usually known as the Middle East, there is an important connection between the two countries owing to similarity of race, religion and language, as well as to geographical proximity. It is, therefore, a mistake to regard recent events in both countries as altogether disconnected, although it is equally

erroneous to imagine that one series of events is the direct outcome of the other.

In July last year, Mohammed Mahmoud Pasha took the bold step of advising King Fuad to suspend Parliament for three years, and since then things have moved rapidly in the affairs of Egypt. Although Egypt nominally enjoyed parliamentary government before this, the country was in reality under the control of a small group of irresponsible politicians who called themselves the "Executive Committee of the Wafd." Political life to which the administration had become subordinated was thoroughly corrupt, and political agitation for the benefit of personal interests obscured even the broad outlines of governmental duties. Indeed, the whole machinery of government was so hopelessly out of order that it was necessary to contemplate a complete reconstruction with entirely new material. In June this year, the Egyptian Prime Minister came to London with a remarkable year's work to his credit, but with no idea of re-opening the question of Anglo-Egyptian relations until the change of Government encouraged him to make use of an opportune moment. As soon as Mahmoud Pasha got in touch with Mr. Henderson, events began to move quickly. Lord Lloyd's resignation, on the 24th July, caused a storm in the House, although Sir Austen Chamberlain had more to do with it than Mr. Henderson, and the Foreign Office permanent staff more than either of these two statesmen. Two days later there appeared in the Cairo newspaper *Al Mokattam* a draft of what purported to be the text of a proposed new treaty between Great Britain and Egypt. On the 6th August, the actual text was published by the British Government, and as far as the Egyptian press version went it proved to be substantially correct.

The Draft Proposals include concessions of the greatest importance to the Egyptians, which would have been unthinkable a few years ago. They are chiefly connected with the British garrison in Egypt, the Capitulations, the Consular Courts, protection of foreigners and minorities, and the status of the British representative. The British garrison is a very sore point with the Egyptians. It offends their dignity to see British soldiers in uniform occupying the historic citadel of Cairo and marching about the streets of the Egyptian capital. It also hurts their susceptibility that British troops should be conspicuously posted in the Kasr-el-Nil barracks, which are in full view of all who cross the Nile on their way to and from the Pyramids. The same applies to Alexandria in less degree, but the point is that the real trouble lies in the visibility of the troops. If they were stationed in some small towns where they would be unnoticed by visitors to the chief cities of Egypt, their presence would cause much less resentment, and after all, this is only human. It is, therefore, largely on this idea that the new

concessions have been based, and it is proposed to move the British regiments from Cairo and Alexandria to other quarters within easy reach.

There is much talk about moving the troops to the actual Canal Zone, but it is questionable whether this would not be likely to cause trouble with other Powers interested in that international waterway. The neutrality of the Canal is guaranteed by international agreements, and the permanent occupation of the Canal Zone by troops of any single Power might be challenged as a breach of that neutrality. Moreover, Great Britain's strategic interest in Egypt is not limited to securing a free passage through the Suez Canal. The "defence of her Imperial communications" means much more than that. Egypt is becoming more and more a central point in the complex of these communications by land, sea and air, and her important position in the world is gradually collecting a wider range of interests. But there is another objection from a purely military standpoint. The towns on the Suez Canal are at present dependent for their water supply on the fresh water canal, which joins the Nile at Kasr-el-Nil in Cairo, so that troops stationed along the banks of the Suez Canal would, under present conditions, be in a most precarious position in regard to water unless the fresh water canal were fully protected. This would mean keeping the garrison in Cairo, and certainly in the Kasr-el-Nil barracks—the very thing which it is hoped to avoid. The wording, however, of the Treaty Proposals is elastic enough to permit of the troops being stationed anywhere east of longitude 32° E., which may solve the Canal Zone difficulty; while attempts are now being made to find some means of supplying water to the towns on the Canal independent of the fresh water canal. It is likely that the matter will be finally settled by compromise, and that certain troops will occupy towns on the Canal banks, while others are stationed at centres on the important railway lines running from Kantara and Ismailia to Zagazig, and continuing to Cairo and Alexandria.

While these concessions are important with a view to a settlement of the Egyptian question, their association with the circumstances of Lord Lloyd's resignation has made a profound impression in the Near and Middle East. Although the nature of that impression is rather what was to be expected, it is certainly not what was desired. No sooner had Mahmoud Pasha returned to Cairo with the Draft Proposals in his pocket than serious disturbances broke out in Palestine, which can to a certain extent be attributed to recent political events with regard to Egypt. At any rate, the harangues of the Grand Mufti of Jerusalem in the Mosque of Omar called the attention of the Palestine Arabs to Lord Lloyd's recall and the political weakness which it appeared to represent. But it is only in so far as the interpretation put upon British policy in Egypt is concerned and the seizure of an opportune

moment for action, that the Palestine disturbances can be connected with that country.

The Palestine disturbances are partly the result of a religious quarrel of many year's standing, but chiefly of racial and political antagonism between Arabs and Jews. While the former are the indigenous people of Palestine, the latter are mostly immigrants from Central and Eastern Europe who have gone to Palestine under the auspices of the Zionist movement. The Jewish "Wailing Wall" in Jerusalem is situated just outside the Temple Area, or Haram-esh-Sharif, which is one of the holiest places of Islam. Indeed, one side forms the inner wall of the Temple Area, while the other has been chosen by the Jews as a place of prayer and lamentation for the loss and destruction of the Temple. The wall itself is Moslem Wakf property, and forms the dividing line between holy places of Judaism and Islam respectively. Hence, it has been a common occurrence for Arabs and Jews to come to blows there on the occasions of their religious feasts.

On this particular occasion, i.e., 15th August, which was a Jewish fast, a demonstration of young Zionist Jews went to the Wailing Wall and read out resolutions "protesting against the failure of the Palestine Government to safeguard the Jewish rights of free and undisturbed worship at the Wall, as guaranteed by the Mandate." A Zionist flag was raised and the Zionist hymn, the "Hatikvah," was sung. This demonstration was permitted by the Government and was given police protection. Then, on the following day, being the Moslem day of prayer, the Government allowed a Moslem procession to take place, also with police protection. This procession passed by the Wailing Wall, and there were not enough police to protect the Jews at the Wall. While the Jewish demonstration was anti-Government, the Moslem procession was anti-Jewish. Both incidents were political, with religion as a pretext. It was this series of incidents that formed the occasion, not the cause of the riots.

It is not possible in a short space to describe the true cause of the trouble, but the fact that the disturbances rapidly became widespread showed that it was a direct clash between Zionism and the native Arab population, and there seems no reason to modify this conclusion on the grounds that the Zionists themselves suffered less than the orthodox Jews.

The result of the upheaval has been the undoing of much of the work of the British Administration during the last ten years, and it has revived that spirit of discord which has recently been subsiding in all the mandated territories of the Middle East.

In 1920, when Sir Herbert Samuel went to Palestine, the country was still upset by the aftermath of war. Respect for human life and property was almost negligible, riots were of common occurrence, and Bedouin raids were frequent. The Military Administration had organized a police force, recruited from the local population and commanded by British officers, but murder, brigandage and other crime continued in spite of the measures taken to prevent it. Under Sir Herbert Samuel's regime this force rapidly became an efficient body of men; crime gradually diminished, and brigandage became almost a thing of the past. Steps were also taken to raise and train the Palestine Gendarmerie, which became a most efficient corps for the police and defence work of the wider areas. This force was a mounted unit, composed of Arabs, Jews and Circassians armed with rifle, lance and sword, and commanded for the most part by British officers. Then, in order to supplement the local police and to give a greater stiffening of British personnel, a battalion of British Gendarmerie was raised, partly composed of "Black and Tans" and partly of Guards reservists completing their nine years with the reserve.

In April, 1926, the Colonial Office considered (prematurely as it proved) that public security was sufficiently good for the British Gendarmerie to be disbanded for the sake of economy, and the Palestine Gendarmerie was absorbed in the Transjordan Frontier Force. Since then Palestine has had to rely on an Arab and Jewish police force, partly commanded by British officers. This force has been supplemented, if necessary, by a small detachment of armoured cars and a few aeroplanes. But as aircraft cannot bomb the Holy City and armoured cars cannot operate in the narrow streets, the peace of Jerusalem has been entirely in the hands of the local police, which in Arab-Jewish riots cannot be expected to deal adequately with the situation. Hence, at the outbreak of the recent disturbances, there was no force in Palestine capable of restoring order and it was necessary to send ships, troops and aircraft from Malta and emergency detachments from Egypt.

Even at the time of writing things are far from normal, and it will take many years to restore public security to the level of a few months ago. Not only has murder and crime of all sorts broken out, but brigandage will long outlive the actual rioting itself, and it may again be necessary to maintain a permanent garrison in the country. The time is favourable for the formation of brigand bands, and most of their members will not stop at murder even for the sake of a paltry sum of money. Of all the difficulties that have faced the Palestine Administration since the British Occupation, brigandage has been one of the most formidable, and this will again have to be overcome by a long and tedious process before the safety of road travel can be re-established.

Meanwhile a Commission of Inquiry has been appointed to investigate and report on the causes of the outbreak, and it is hoped that the eventual publication of their report will dispel many of the misconceptions regarding the true political condition of Palestine.

### GREAT BRITAIN AND IRAQ

By LIEUTENANT-COLONEL E. G. HENDERSON, late R.E.

**I**T is less than thirteen years since we triumphantly entered Baghdad. Since then we have expended much effort and money in an attempt to set up the state of Iraq. The present situation in that country, *vis-à-vis* Great Britain, may not unfairly be summed up in the words of the wits of the local coffee shops as "the perplexing predicament." This is ridicule, not less biting because it is the truth; but it is not the whole truth. Therefore there is no ground for panic or resort to ill considered action. Near and Middle East questions, because they are perplexing, lend themselves to slogans. But such slogans, being chiefly catchwords, generally have a catch. Safety alone lies in well weighed public opinion. Let us, therefore, sum up the situation.

The ultimate issue before us to-day is less military than commercial. A vital question of the future is the rationalization of world trade itself: that is to say a balancing of the products of tropical and sub-tropical areas with those of temperate areas. Allied to this, and in a sense more difficult of solution, is the establishment of more stable and better balanced relationships between the more advanced white races and the others. Another aspect of this problem is presented by countries through which run world trade routes, whether by land, water or air. It is in these last respects that the maintenance of a close relationship between Great Britain and, amongst other countries, Iraq, will be found to be vital.

#### THE MAIN FACTORS.

(a) *Historical*.—No Western nation has had closer or more unbroken dealings with Iraq than we have. Judged by the past our record is good. But to day there is this new phenomenon arising, namely, that we face almost a new world, especially in the East with its new aspirations. The past, therefore, in practice affords warnings rather than direct guidance.

(b) *Cultural*.—Inseparable from the problems of trade and political development is the question of cultural development. Here again Great

Britain need not fear comparisons. We certainly have more practical experience than any other people. The advantages of English culture are not less than that of any other ; in the near future they may well be greater. Spiritually, the British Empire stands, above all, for freedom. Lastly, the fact that under our rule are more Mohammedans than under any other flag is a special reason for the closest relationship with a country which is the geographical centre of the Mohammedan world. Iraq has lost nothing by being brought into close touch with us.

(c) *Material*.—Here we come to business and the pith of the problem. The trend of world trade is towards rationalization as between nations, with a growing importance of world lines of communication. Of special interest to the British Empire are two such lines, one from London eastward to Sydney and Dunedin, the other from London westward to Dunedin. Each line intersects the land area of the hemisphere concerned, the former traversing Iraq, the latter Panama. The latter is of secondary world importance but of primary importance to the U.S.A. The former, if the area be enlarged to include Egypt, is of primary world importance. It forms the nodal point of all the shortest ocean and air routes from Europe and the West to the rich areas bordering the Indian Ocean. Great Britain's interests in such a nodal point are pre-eminent ; and our relations with Iraq, with Palestine and Egypt are absolutely vital, and should therefore be most friendly. Further, in view of the advantages gained by us it is not only our duty, it is also good business in every way to ensure that Iraq shall, through us, attain true prosperity. It is impossible to overlook the fact that only unquestioned success in this latter respect can, in the last resort, give us an indefeasible claim to continue a special relationship which is essential to ourselves.

(d) *Mandate*.—The grant of the mandate to Great Britain is confirmation by world public opinion that Great Britain is not only best fitted for, but has a prior claim to the maintenance of special relationship with Iraq and Palestine. In yet another way world public opinion has recognised our prior claim to special relations in regard to Egypt.

#### A POSSIBLE SOLUTION.

In the end the acid test lies in results, and so judged, few will be so optimistic as to say that our relations with Iraq have been a success. From a consideration of the chief factors which have been enumerated, the main desideratum now would appear to be not so much change in policy as in attitude to details. The Middle East,—Iraq, Palestine, Transjordan and Egypt—should come under one single Department of State in this country. A bold measure of self-government would achieve much necessary decentralization, while launching the country concerned on a course it must sooner or later attempt. A corollary is the reduction

to an absolute minimum of European personnel. Any such retained should possess exceptional qualifications for their duties.

The most delicate question of all is that of finance. Old world notions of tax collecting and revenue spending, especially on overhead charges, are very strongly entrenched in the Iraqi mind, from the highest to the lowest. None of the political heads have any experience of questions of expenditure on, still less of loans for, truly productive development and public works. Supervision must be close and detailed, if only for the protection of the taxpayer. It should continue in lessening degree until real financial stability is firmly established. This desideratum will probably be sooner attained if it is clearly understood that the British taxpayer will not spend one penny more on the country directly. In other words, the policy of doles must cease.

Another vital question is that of defence. But who, after all, seriously proposes to invade Iraq? There may be difficulties in external relations over customs dues, transit dues and so forth. In consideration of our special relationship the good offices and resources of the British Foreign Office should be made available as a last resort. But to-day the boot is on the other leg, for the Iraqis allege that the crushing burden of military expenditure laid by us on the country by Treaty is, in point of fact, to meet the possibility of situations arising in which Iraq may become involved, whereas the real quarrel is against us and may be over some matter of no concern to Iraq. Actually there need be few qualms in a drastic reduction of army units to cadres. The existing Police Service, which, with the Health Service, is one of the two bright spots due to our advent, is ample for safeguarding internal and even border law and order. It is a moot question how long our Air Force units should continue in the country, but so long as they do remain their cost should fall on us.

## CHINA

By E. W. MEAD.

*(Late of the British Consular Service and Chinese Salt Administration.)*

**P**EKING fell to the Nationalists in June, 1928: British official recognition was accorded to the new order in December. On New Year's Day, 1929, the flag of Nationalism was hoisted in Mukden. For approximately a year, then, China has been able to claim that a single Government has ruled the country. The optimists have acclaimed the beginning of a new era; the pessimists have spoken of a lull before

war lords, in some form or other, take the field again. But even pessimists have to admit that in these days a year is a long time for any Government to maintain itself before the world as the accepted spokesman of the whole of China. Internal rebellion, chaotic finances, war on its northern borders, none of these have so far sufficed to submerge the Kuo Min Tang's appointees in the Southern capital. Prudence forbids to prophesy; but at the moment the outlook for even superficial unity appears to be as gloomy as ever. Still it is a matter for surprise, not that Nanking seems to be about to face the greatest crisis of its career, but that it has succeeded for a year in keeping its head above water.

The Nanking Government is not, and never has been, popular except in two respects. In the first place it heralded the end of a phase of civil war, and alone appeared to offer a chance of repose to a war-distracted country. But there is no sign that in the ordinary business of government Nanking has improved upon its predecessors. On the contrary, complaints of corrupt officials and burdensome taxation are heard at least as loudly as ever before. There is no liberty of speech or of the press. Brigandage is as bad as ever. But—and here is the second reason for its survival—Chiang Kai Shek's government has undoubtedly had the country, or such of it as is articulate, behind it in its foreign policy. In this respect Nationalism can point to certain achievements. Since the march from Canton some foreign concessions have been actually regained; the foreigners' grip on others seems to be relaxing. The privileged status of foreigners at all events forms the subject of discussion with the Powers, and modification may be in sight. Who will be the gainer by these successes is not altogether clear, but it is vaguely felt that China's international position is being enhanced. Throughout the country there is now a degree of unity as regards foreign policy, entirely unknown as recently as ten years ago.

In mid-August were delivered replies of the Powers to the Chinese Government's most recent request for the abolition of extra-territoriality. The tenor of these replies was the same. They were worded in most friendly language and foreshadowed the possibility of modifying by agreement the present system of consular jurisdiction. But they pointed out that the recommendations of the Commission which toured China in 1926 have not been substantially carried out, and that there does not exist in China to-day a system of Courts capable of doing justice between Chinese and foreigners.

These replies met with the reception to be expected from a Government which has made its one article of faith the removal of any limitation upon the sovereignty of China within her own territory. Mr. C. T. Wang, the Foreign Minister, announced an extensive campaign

for the abolition of extra-territoriality and is reported to have said, after referring to the action of Turkey in similar circumstances, "The people of China will certainly get what they demand if they put their whole heart in it." The conference of the International Chamber of Commerce at Amsterdam in July provided an interesting commentary on this same question. It was found impossible to discuss economic questions with the Chinese delegates, among whom practised propagandists took the most prominent place, owing to the intense political spirit which dominated them. They stated in effect that they were interested in no economic collaboration until the "unequal treaties" and extra-territorial rights of foreigners were abolished.

Stated bluntly, it is a fact that such unity as exists in China to-day has been achieved through anti-foreign agitation. It may be hazarded that so long as the position of the foreigner in China can be misrepresented as conferring improper privileges upon him, anti-foreign agitation will continue to be the most potent instrument in maintaining a similar unity.

Agreement on foreign policy, however, has brought with it no harmony in domestic affairs. On the contrary, throughout the period of Chiang's supremacy the bitterest dissensions have raged. These even now may be about to lead to new chaos.

After the defeat of the Wuhan rebellion in the spring, Chiang Kai-shek's Government turned its attention to Feng Yü-hsiang, the "Christian General." Feng's attitude during the rebellion had been ambiguous. His troops had made a dash from Honan for Hankow, in support, as he afterwards explained, when he found his troops had been anticipated, of the Nanking armies bound for the same goal. But this explanation clearly did not convince Nanking. Consequently the policy of disbandment, one of the planks of the Government's programme, which was to apply to all forces throughout the Republic, was chiefly heard of during the summer in relation to the armies of Feng and to his personal control over them. Feng's force was to be reduced from 200,000 to 130,000 men and, more important still, Feng himself eliminated from all command. The attempt was made in typically Chinese fashion. It was first announced that Feng had expressed a desire to go abroad to study; at the same time efforts were made to persuade Yen Hsi-shan, the late Tuchün of Shansi, and a more amenable person altogether than Feng, to undertake control of the "Christian General's" forces. Yen, however, was not to be caught. Even if he could handle Feng's subordinates, which was questionable, he no doubt felt that his own turn would come next. The net result of Nanking's manoeuvre was to throw Feng and Yen,—two men who have viewed each other with suspicion

for years,—into each other's arms. Yen announced that he, too, desired to travel abroad and the comedy proceeded even to the booking of passages to Japan for both Generals. But the fact was that Nanking was in no position to control the North West. Her alternate threats and cajoleries were all to no purpose. Finally, in July, Chiang Kai-shek accepted the inevitable. He could not yet afford to throw down the gauntlet; so it was announced that Feng and Yen would both remain in China "to carry out the disbandment jointly." How far they proceeded with this duty has not appeared, but as funds were essential, and Nanking's "Disbandment Loan" for \$70,000,000 announced during August completely failed, further enquiry does not seem necessary.<sup>1</sup> In the closing days of September came the bombshell of Chang Fat Kwai's rebellion and this was followed—on 12th October—by the news that both Feng and Yen have openly declared against Nanking.

Chang Fat-Kwai has always been regarded as a Nationalist of Nationalists. His division was prominent in the march from Canton to the Yangtse and to Peking, while he was generally connected with the extreme left of the Nationalist movement headed by Wang Ching-wei. He has now denounced Nanking and disappeared with his redoubtable 4th Division from Ichang towards the South. According to report he has already crossed Hunan and entered Kwangsi with the object of capturing Canton and joining forces with a re-organized Kwangsi party, which has been recuperating since its defeat at Hankow. It will say much for the unpopularity of the Nanking regime if it can produce a real alliance against itself between the two extreme wings of the Kuo Min Tang. For Wang Ching-wei's party has a decidedly red tinge while the Kwangsi clique are in many respects most respectably conservative. It is impossible to believe that such diverse parties as these, together with Feng Yu-hsiang and Yen Hsi-shan, are acting in concert through any other motive than a cordial dislike of the present Government. That they are actuated by any common constructive ideas is unthinkable.

Distracted by problems nearer home and none too secure in its authority in Manchuria, Nanking has allowed its dispute with the Soviet to drag on indecisively. The true inner history of the seizure of the Chinese Eastern Railway by the Chinese Authorities would be interesting reading. The official version, namely, that Soviet officials were utilising their position to carry on communist propaganda may be the real one. The existence of such propaganda was no doubt true, and no evidence has been offered to support a suggestion that the Chinese wished to anticipate a sale of the Soviet's interest in the Railway to Japan. In any

<sup>1</sup> In withholding their assistance to float this loan the Chinese Bankers asked pointedly what had become of the loan of \$50,000,000 raised for the purpose of disbandment in 1928.

case, China has treated her Russian neighbour with supreme contempt. Having put herself technically in the wrong by seizing Soviet property, she has stubbornly refused to retract her action in any way. Instead, she has proposed that negotiations should take place and that meanwhile the Railway should remain entirely in Chinese management. The Soviet somewhat naturally rejected the offer, because by the agreement of 1924 Russia is entitled to a half share in the management.

Since then matters have gone from bad to worse. Diplomatic relations were broken off early in June; wholesale arrests and deportations on either side followed, and in the absence of any progress towards a settlement actual warfare on the frontier has resulted. This first took the form of skirmishes, both sides alleging that they acted in self defence. But in August a new Soviet Commander-in-Chief arrived in Chita in the person of General Blücher, better known in China as Galens, Chief Adviser to the Nationalist Government in 1926 and part of 1927. A more active frontier warfare followed during September, including heavy artillery bombardments by the Russians of the towns of Manchuli and Pogranichnaia.<sup>1</sup> The Mukden authorities, whose troops have been sent to the Northern frontier to meet the danger, appear to be more anxious than Nanking to reach a settlement, but there is nothing to show that such is in sight. It is, however, interesting to observe that Japanese reports have all agreed since the outset of the trouble that war in any serious form would be avoided.

<sup>1</sup> These two towns are situated on the Western and Eastern Russo-Manchurian frontiers respectively.

Many of us have doubted whether this idea of improving our office efficiency by the means suggested, but have not been able to find any legal method of doing it. Would R.Q.M.S. (Notre) tell us how it can be done?

Yours, etc.,  
W. H. BENTLEY,  
Major, R.E.

GIBRALTAR,  
20th August, 1934.

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

Sir—The very interesting article by R.Q.M.S. (Notre) and Lieut. Lindsay in the August Journal deals fully with Regimental Office organization in peace, but does not legislate for active service.

It occurs to me that very few regimental clerks will be equally adaptable to the two extremes, the luxurious office of peace, and the squalid tent or container in all, plus the two tin stationery boxes, which I believe, are still the Orderly Room modification equipment of an infantry battalion.

## CORRESPONDENCE

[Correspondence is invited on subjects which have been dealt with in the JOURNAL, or which are of general interest to the Services. Correspondents are requested to put their views as concisely as possible, but publication of letters will be dependent on the space available in each number of the JOURNAL.—EDITOR].

### THE REGIMENTAL OFFICE

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—In your last issue you publish an article by R.Q.M.S. Hotine, advocating the provision of modern office appliances in Regimental Offices. The writer quite rightly points out that it is useless to expect any extra provision for such appliances from Public Funds, but suggests that they should be bought piecemeal from Regimental Funds. He admits that many Commanding Officers may, with reason, be against applying their funds to this purpose.

May I point out that such Commanding Officers have a very good reason for their prejudice in that the application of Regimental Funds deriving their income from N.A.A.F.I. Rebate, to such a purpose, is forbidden by Regulations. (Rules for the Conduct of Garrison and Regimental Institutes, 1929, para. 7 on page 6). As regards other Regimental Funds, supported by the subscriptions from officers and men, e.g., sports club, rifle club, etc., I venture to think that very few Commanding Officers would approve of buying Orderly Room appliances from them, even if the various committees administering them suggested it.

Many of us have doubtless had this idea of improving our office efficiency by the means suggested, but have not been able to find any legal method of doing it. Would R.Q.M.S. Hotine tell us how it can be done?

Yours, etc.,

W. E. BRITTEN,  
Major, R.E.

GIBRALTAR,  
30th August, 1929.

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—The very interesting article by R.Q.M.S. Hotine, 52nd Light Infantry, in the August JOURNAL deals fully with Regimental Office organization in peace, but does not legislate for active service.

It occurs to me that very few regimental clerks will be equally adaptable to the two extremes, the luxurious office of peace, and the billet, tent or nothing-at-all, plus the two tin stationery boxes, which, I believe, are still the Orderly Room mobilization equipment of an infantry battalion.

It was with two such boxes that, as Adjutant of the 52nd, I went to France in August, 1914. In one of them, I remember, it was the Adjutant's custom to have a bath, while the lawful contents were encased in a ground sheet till their box should be fit to receive them.

These two boxes we were compelled surreptitiously to augment till their number reached, I think, seven.

One of our boxes was devoted entirely to War Diary apparatus and material, also to a rough and ready, but efficient, substitute for a typewriter, a Plex Multicopier, which had this advantage, that it would reproduce sketches and rough maps which a typewriter would not. We had really two of these copiers, but one was always away being recharged—in London; we could not have done this from any other battle front than France; I mention this article because it enabled us to remain, I believe, the only regiment of our brigade, if not division, which did not equip itself—at its own expense—with a typewriter.

The great hindrance to the office work in the field—I mean, of course, that part of it which was done at the headquarters of the battalion and not at the base—was the everlasting packing up and unpacking, frequently at extremely short notice or no notice at all. This leads inevitably to the occasional loss or mislaying of a file.

I think what is wanted is an Orderly Room Wagon—motor, or horse, or mule drawn, or interchangeable among these according to circumstances, so that nothing need ever be packed up, and work need never be interrupted.

And what about the Quartermaster and his Staff? It seems improbable that a second wagon would be issued, or that one would be necessary. Whether or no one could use the same wagon for the two offices depends on:—(1) its size, (2) the degree of brotherly love existing between the two departments, and (3) the size of the Staffs. The Quartermaster may in practice be found to have the wagon to himself since the Adjutant will be chiefly forward with his battalion; this should obviate any serious difficulty as to space.

Yours, etc.,

R. CROSSE,

Lieut.-Colonel, late 52nd Light Infantry.

## GENERAL SERVICE NOTES

### THE NAVY AND THE TERRITORIAL ARMY

**A COMBINED EXERCISE.**—On the 8th August the 47th (2nd London Territorial) Division carried out a landing exercise at Newhaven (in conjunction with a number of aeroplanes, tanks and a few other regular troops) with the help of the Royal Navy. The general idea of the exercise was as follows:—

The States of Downland (capital, London) and Greyland (capital, Cardiff) had been at war for some months without reaching a decision. On the 1st July, Greyland won a naval battle, driving the remnants of the enemy into Portsmouth. It was decided to follow this up by sending the 47th Territorial Division to capture Portsmouth. These troops were imagined as having assembled at Bristol, whence they sailed on 6th August. Early on 8th August, Greyland effected a surprise landing between Seaford and Newhaven. The 140th Brigade, together with some regular artillery, the 220th Field Company R.E., the 4th London Brigade Signal Section, a detachment of the 2nd Cavalry Divisional Signals, the 13th London, 14th London, 16th London, 28th London, and a detachment of the 140th London Field Ambulance, represented the invaders. The defenders, representing Downland, were made up of the rest of the 47th Division, together with certain regular units and a number of light tanks, also the 23rd London (Sharpshooters) Armoured Car Company.

In addition to representing a landing the exercise was designed to illustrate a mobile column being transferred rapidly from one point to the other by motor transport, in order to resist a surprise landing attack.

The landing was carried out at 9 a.m., the troops being landed from H.M.S. "Iron Duke," on which they had spent the night. A smoke screen was put up to assist the landing, but as it was made by only one destroyer, it would not have been of sufficient volume to cover any very ambitious operation. Actually two tows were employed, each of which was headed by a picket boat, with a launch or pinnace and cutters in tow. Owing to the shelving nature of the beach, the tows had to be slipped when some distance from the shore, and graplines were run out by the beach party to haul the boats into shallow water. As a method of landing on an open beach that adopted was old-fashioned and crude to the last degree, but it was not intended that the exercise should represent a landing in the face of any considerable resistance.

Once ashore, the exercise became somewhat more instructive. The defending aeroplanes distinguished themselves by the boldness with which they attacked the troops on the roads leading from the beach. The operation then assumed a purely military character. The defending Downlanders established touch with the Greyland invaders at 11 a.m. some three miles inland, on the line Telscombe-Southease. Meanwhile the Downland mobile column from Worthing which arrived at a point near Rottingdean at 10.50 a.m. joined in the defence. Aided by a smoke screen and by light tanks, the defenders gained the heights North-West of Telscombe shortly after 12.45 p.m. The engagement on the Downs was keenly contested and realistic, but calls for no special mention.

The Umpires' decision was that the landing had failed, in spite of the heavy covering fire from H.M.S. "Iron Duke," which was intended to represent an entire squadron of heavy ships.

Although carried out on such a small scale, this brief operation provided valuable experience. Amongst other lessons it showed conclusively, if such proof were required, that defence against a landing on the beach can be greatly assisted by aircraft attack. It also demonstrated the necessity for mobile columns to form part of any force defending a coast which might prove a possible landing place for an invader. On the other hand, it is generally accepted that landings in the face of heavy resistance are not a very likely form of military operation in the future, and in this particular instance the actual landing was not supposed to be contested. The resistance began after the invader had set foot on shore and was ready to start moving inland.

#### OPERATIONS IN IRAQ. AWARD OF MEDAL AND CLASP

The King has been graciously pleased to approve of the General Service Medal with Clasp, "Southern Desert, Iraq," being granted to the British and Indian Military Forces employed in the operations against the Akhwan in the Southern Desert, Iraq, under the command of Air Commodore T. C. R. Higgins, C.B., C.M.G., Royal Air Force, between the 8th and 22nd January, 1928 (both dates inclusive), or, Wing-Commander (now Group-Captain) E. R. C. Nanson, C.B.E., D.S.C., A.F.C., Royal Air Force, between 22nd January, 1928, and 3rd June, 1928, both dates inclusive.

Individuals already awarded the Medal will receive the Clasp only.

#### THE SERVICES IN PALESTINE

On Friday, 23rd August, tension between Arabs and Jews led to serious riots, first in Jerusalem and subsequently all over Palestine. The situation developed so seriously that the existing forces, R.A.F. and local, were unable to maintain order. These forces consisted of one bomber squadron and one section of armoured cars, R.A.F., stationed at Amman, and other details: the Palestine Police, a force consisting of 5 British officers, 166 British other ranks, 114 officers and 1,264 men composed of Moslems, Christians and Jews, and the Trans-Jordan Frontier Force, about 26 British officers and W.Os, 26 local officers and 628 other ranks composed of Arab Moslems, Circassians, Sudanese, Jews, etc. Group-Captain Playfair commanded the R.A.F., and was responsible, in conjunction with the High Commissioner, Sir John Chancellor, for the maintenance of internal order in the country.

The disorders first took the form of murderous attacks by Arabs upon the Jewish community following upon the old religious feud over the "Wailing Wall" in Jerusalem. The towns of Jerusalem and Jewish suburb Talpioth, Jaffa and Jewish suburb Telaviv, Nablus, Safed, Haifa, Baisan, Moza and Hebron and many smaller places were the scenes of brutal attacks and atrocities, particularly at Hebron. In some cases a handful of police under an officer saved a whole village or quarter from slaughter. The Jews, of course, retaliated, and in the later disturbances it has not always been easy to distinguish which party was the aggressor.

#### REINFORCEMENTS

These events called for the despatch of urgent reinforcements, and between the 23rd and 27th August, H.M. ships "Barham," flying the flag of the Rear-

Admiral, 1st Battle Squadron, "Sussex," "Courageous," "Wanderer" and "Veteran" arrived off the Palestine coast. Landing parties, consisting of about 110 officers and 1,000 men, were landed at Jaffa and Haifa from the first three named ships; and the Fleet Air Arm flights from "Courageous" went to Gaza.

From Egypt arrived:—

- 1st Battalion South Wales Borderers (less one company);
- 2nd Battalion Green Howards;
- One Company, 1st Battalion King's Regiment;
- One Squadron (11) Armoured Cars of the Mechanized 12th Lancers;
- Details Signals, R.E. and R.A.S.C.

From Malta:—

- 2nd Battalion South Staffordshire Regiment.

Early in September one section<sup>1</sup> armoured cars was sent from Iraq, together with two squadrons R.A.F. from Egypt. Brigadier W. G. S. Dobbie arrived from Cairo to take command of all land and air forces in Palestine, but was superseded by Air Vice-Marshal Dowding, who arrived from England on 11th September. This is in accord with the fact that the direction of operations has throughout been in the hands of the Chief of the Air Staff at the Air Ministry.

The problem confronting Brigadier Dobbie was the difficult one of restoring order over a large area with limited forces. Punitive measures such as the bombing or burning of villages harbouring offending tribes were not permitted. Broadly, the steps taken have been:—

- (1) Concentration of Jewish communities in the towns and suburbs into places of safety;
- (2) Disarmament of the civil population, both Jewish and Arab;
- (3) Raids by both air and ground forces to round-up known offenders and to disperse threatening assemblies of Arabs;
- (4) Rigid curfew;
- (5) Aerial reconnaissance to locate and prevent the incursion of bands of Arabs from neighbouring territories.

The situation at one time looked serious, but with the co-operation of the High Commissioner for Syria, the French military dispositions were reorganized and reinforced on the Syrian border. It is yet early to say that this danger has passed or that serious repercussions will not be felt in Iraq and Arabia, and possibly Egypt.

Armoured cars proved useful in assisting the military forces and police to carry out raids. The whole country has been systematically patrolled by aircraft, and many arrests made, including several notable agitators.

As soon as the High Commissioner returned from leave he issued a proclamation in which he expressed his disgust at the turn of events, and warning all agitators, irrespective of race or creed, against rioting and murder, under penalty of the severest punishment.

By the 6th September, certain Jewish colonies were re-occupied in the Safed and Haifa districts. Two days later the situation was much improved and tranquil in all areas. By 15th September the landing parties from the ships, which

<sup>1</sup> An R.A.F. wing of armoured cars consists of 6 sections of 3 cars in each section.

had been assisting to restore order, had re-embarked, and the warships left to resume their normal cruises, but the "Courageous," "Malaya" and a ship of the 3rd Cruiser Squadron were to visit Haifa and Jaffa later on. Jews and Arabs guilty of offences are being tried, but the process will no doubt produce recriminations amongst their partisans both in and out of Palestine.

It is difficult to unravel from this complex situation any single cause for the unfortunate state of affairs which has arisen; but it seems probable that the real origin of the trouble lies in the fear of the Arabs of being ousted from the control of the country, and from their traditional methods of living and husbandry, by the superior ability and organization of the Jews. The conflict is fanned by racial and religious antagonism.

Great Britain is pledged to support the policy of Zionism; but it was intended that Arab interests should be safeguarded by strong representation on the Legislative Council, which forms part of the new constitution (1922) of the country. The Arabs have, however, hitherto refused to take part in any elections, so that no Legislative Council has yet come into existence.

#### THE BALFOUR DECLARATION

The wording of the Balfour Declaration of 2nd November, 1917, is as follows:—

"His Majesty's Government view with favour the establishment in Palestine of a national home for the Jewish people, and will use their best endeavours to facilitate the achievement of that object, it being clearly understood that nothing shall be done which may prejudice the civil and religious rights of existing non-Jewish communities in Palestine, or the rights and political status enjoyed by Jews in any other country."

#### JAPAN

##### INDUSTRIAL MOBILIZATION TEST

The first thorough experiment of "industrial mobilization against invasion" was carried out on the 24th June, in the three prefectures of Osaka, Kyoto and Hyogo. Some hundreds of factories were ordered to prepare and produce in record time the material for which they were severally responsible. These articles included aspirin and other chemicals, shells, bullets, various oils and acids, and other requirements of modern warfare.

Private motor and other vehicles for transport purposes were also required to assemble at stated times and places, and 30,000 reservists had to attend a roll-call.

The active co-operative movement, in which the municipal, naval and military authorities are concerned, is under the direction of the Chief of the National Resources Bureau.

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## NAVY NOTES

### GREAT BRITAIN.

#### FIRST AND PRINCIPAL A.D.C. TO THE KING.

The Admiralty notified on 7th September that Admiral Sir William Goodenough, K.C.B., M.V.O., was to be First and Principal Naval Aide-de-Camp to H.M. the King, in succession to Admiral Sir Richard F. Phillimore, G.C.B., K.C.M.G., M.V.O., to date 6th October. On the retirement of Admiral Phillimore on the latter date, Admiral Sir William Goodenough, late Commander-in-Chief at the Nore, became the senior Admiral on the active list.

#### THE FIRST LORD AFLOAT.

Mr. A. V. Alexander, M.P., First Lord of the Admiralty, accompanied by his Naval Secretary, Rear-Admiral G. K. Chetwode, C.B., C.B.E., embarked in H.M.S. "Nelson" at Invergordon on 8th October to witness the Atlantic Fleet autumn exercises. On 10th October, the First Lord witnessed flying exercises from the "Furious," and later embarked in a submarine, which submerged and made a dummy attack on the "Adamant." On the 11th, he embarked in the "Centaur," destroyer flagship, to witness destroyer exercises at sea, including firings at the "Centurion." The First Lord left the Fleet on the afternoon of 13th October.

#### HONOUR FOR CHINA SERVICE.

On 31st July, it was announced that the King had given orders for the promotion of Admiral Sir Reginald Yorke Tyrwhitt, Bt., K.C.B., D.S.O., D.C.L. (Oxon.), to be a Knight Grand Cross of the Order of the Bath (G.C.B.), Military Division, "in recognition of his eminent services while holding the appointment of Commander-in-Chief, China Station, from January, 1927, to February, 1929."

#### FLAG RETIREMENTS AND PROMOTIONS.

Rear-Admiral W. M. Kerr, C.B., C.B.E., having been lent to the Royal Australian Navy, from 31st August, a vacancy was caused in the Rear-Admirals' list, in consequence of which the following promotions and retirements took place:—Captain Ronald Howard, A.D.C., to be Rear-Admiral in H.M. Fleet, 31st August, and placed on the retired list, 1st September; Captain Raymond Fitzmaurice, D.S.O., A.D.C., to be Rear-Admiral, 1st September, and placed on the retired list, 2nd September; and Captain (Commodore 2nd Class) Frank F. Rose, D.S.O., A.D.C., to be Rear-Admiral, 2nd September.

The retirement was announced on 1st October, at his own request, of Rear-Admiral H. P. Douglas, C.B., C.M.G., Hydrographer of the Navy. His service in this post has been extended for a period three years from the date of his retirement. Captain G. A. Wells has been promoted to Rear-Admiral on the retirement of Rear-Admiral Douglas.

Admiral Sir Richard F. Phillimore, G.C.B., K.C.M.G., M.V.O., was placed on the retired list, to date 6th October. In consequence, Vice-Admiral Sir Herbert W. Richmond, K.C.B., was promoted to be Admiral; Rear-Admiral D. T. Norris,

C.B., C.M.G., to be Vice-Admiral, and placed on the retired list; Captain G. T. C. P. Swabey, D.S.O., to be Rear-Admiral, and placed on the retired list; Rear-Admiral H. W. Parker, C.B., C.M.G., to be Vice-Admiral; and Captains N. E. Archdale, C.B.E., and J. K. im Thurn, C.M.G., C.B.E., to be Rear-Admirals.

Admiral Sir Rudolf W. Bentinck, K.C.B., K.C.M.G., was placed on the retired list, at his own request, to date 9th October after relinquishing the post of Commander-in-Chief, Plymouth. In consequence, Vice-Admiral Sir Hugh Watson, K.C.B., C.V.O., C.B.E., was promoted to Admiral; Rear-Admiral Oliver Backhouse, C.B., to Vice-Admiral; and Captain Ralph Eliot, C.B.E., to Rear-Admiral. Vice-Admiral O. Backhouse was placed on the retired list to date 10th October, whereby Rear-Admiral R. R. C. Backhouse, C.B., C.M.G., was promoted to Vice-Admiral, and Captain the Hon. W. S. Leveson-Gower, D.S.O., to Rear-Admiral. Rear-Admiral R. Eliot was also retired on 10th October, whereby Captain P. L. H. Noble, C.V.O., was promoted to Rear-Admiral.

#### PERSONNEL.

**UNIFORM CHANGE.**—It has been decided, with the King's approval, that the use of the white coat shall be discontinued from 1st January, 1932. In future, the white tunic will be the correct dress with No. 8 (white full dress), No. 8a (white dress), and No. 8b (white undress), but until 1st January, 1932, officers in possession of white coats may wear them on board on such occasions under No. 8b as, in the discretion of Commanders-in-Chief, are informal.

**OFFICERS' PHOTOGRAPHS.**—In order to make the records more complete, the Admiralty are desirous of placing photographs of officers with their records at the following stages in their careers:—Executive officers, on promotion to Sub Lieutenant or Mate, Commander, and Captain; Engineer officers, on promotion to Sub Lieutenant (E) or Mate (E), Engineer-Commander or Commander (E), and Engineer Captain or Captain (E); Accountant officers, on promotion to Paymaster Sub-Lieutenant and Paymaster Commander; Instructor officers, on entry and on promotion to Instructor Commander; and Chaplains, on entry. The system was already in force for medical officers, and had been found most useful and practical.

**RONALD MEGAW PRIZE.**—The Ronald Megaw Memorial Prize for 1928-29, for the Sub-Lieutenant obtaining the highest place during the preceding year in the various examinations for officers qualifying for the rank of Lieutenant, has been awarded to Lieutenant A. L. Taylor, of H.M.S. "Effingham."

**ADVANCED ENGINEERING PRIZE.**—A prize of £20 has been awarded to Lieutenant (E) H. G. C. Butler, of H.M.S. "Ramillies," on the result of the final examination held on the conclusion of the advanced engineering course at the R.N. College, Greenwich, in July last.

**EMPLOYMENT OF RETIRED OFFICERS.**—A Fleet Order states that their Lordships would be glad if officers who hear of any appointments or opportunities of employment outside the Service, suitable for retired officers, would communicate details to the Secretary of the Admiralty.

**MIDSHIPMEN'S "FORMER SERVICE" MARKS.**—The system of awarding "former service" marks to Midshipmen has been under review, and in order to remove as far as possible the inherent difficulties of assessing these marks with any degree of uniformity during the earlier stages of officers' careers, yet at the same time to encourage the development of officer-like qualities, a revised procedure is to be brought into force with Midshipmen of seniority 1st January, 1928, and later.

"Former service" marks are to continue to be awarded at the examination in seamanship, but are to be based only on officer-like qualities, ability and attention to duty—not on professional knowledge.

**ADVANCED CLASS ENTRIES DISCONTINUED.**—The arrangements for the direct entry of boys in the Advanced Class, for training as seamen, signalmen and telegraphists, will be discontinued after the present year. This scheme was started in January, 1928 (see the JOURNAL, February, 1928, page 172).

**NEW WRITER AND SUPPLY RATINGS.**—By an Order in Council dated 8th June, published in the *London Gazette* ten days later, there are established the new ratings of Writer Probationer and Supply Probationer, with pay at the rate of 2s. 6d. a day, and with relative rank as Ordinary Seaman. Future entries in the branches concerned, other than those entered from Greenwich Hospital School as boy writers and supply boys, will hold the new ratings while undergoing disciplinary and professional courses. Additional progressive pay after three years and six years respectively was also sanctioned for Writer and Supply ratings.

**DOCKYARD HOLIDAY PAY.**—A fleet order dated 13th September, notified that workpeople in H.M. Dockyards and other Admiralty establishments at home, who had not hitherto been allowed any leave of absence with pay (apart from the paid general holidays), were, provided they had completed a full year's service in their present employment, to be allowed in future absence on leave with pay to the amount of one pay-week a year. The number of paid general holidays is to be increased from four to five a year. The purpose of this grant of leave with pay is to enable every employee to enjoy a complete week of absence from duty every year. The additional general paid holiday is to be on Boxing Day, but another day may be substituted in Scotland if more suitable.

#### MATERIAL.

**1928 PROGRAMME REDUCED.**—In pursuance of the decision of the Government, recorded in the last JOURNAL, to cancel the building of the submarine depot-ship "Maidstone" and the submarines "Royalist" and "Rupert," and to suspend the building of the cruisers "Surrey" and "Northumberland," instructions were sent to the dockyards on 25th July that all work on these vessels was to cease forthwith.

**CRUISERS COMPLETED.**—The commissioning of the cruiser "Shropshire" at Chatham on 24th September to replace the "Frobisher" in the First Cruiser Squadron, Mediterranean Station, completed the four ships of the "London" class, authorised in the naval programme of 1925.

**NEW WARSHIP LAUNCHES.**—An unusual event at the Barrow works of Vickers-Armstrongs, Ltd., on 22nd August, was the launch of a submarine and a destroyer on the same day. The submarine "Pandora" took the water at 12.45 p.m., and the destroyer "Arrow" twenty minutes later.

The flotilla leader "Codrington" was launched by Swan Hunter and Wigham Richardson at Wallsend on 8th August, and the destroyer "Acasta" by John Brown & Co., Clydebank, on 9th August. The "Achates" was put afloat, also at Clydebank, on 4th October, and it is arranged to launch the "Acheron" at the Thornycroft works, Woolston, early in 1930, which will complete the putting afloat of the eight destroyers of the 1927 Estimates. The submarine "Phoenix" was launched from the yard of Cammell Laird & Co., Birkenhead, on 3rd October.

**NEW SLOOPS ORDERED.**—The 1929 Navy Estimates included provision for the building of six sloops, two in the Royal Dockyards and four by Contract. On 2nd September, the Admiralty announced that the Government had authorised

the construction of two of these ships to be begun during the autumn. Normally, the construction of these vessels would not have begun until after March, 1930. It was understood that the unemployment position was largely responsible for the decision to start construction earlier.

The names of "Shoreham" and "Fowey" have been assigned to these vessels. The "Shoreham" will be built at Chatham and the "Fowey" at Devonport.

#### EXERCISES AND CRUISES.

**ATLANTIC FLEET.**—The Atlantic Fleet under Vice-Admiral Sir Ernie Chatfield left its home ports on 9th and 10th September, for the customary autumn practices off the East coast of Scotland. The battleships, cruisers and aircraft-carriers were to return to Portland on 7th November, but the destroyer flotillas were to remain in the Firth of Forth until the end of that month. The fleet will disperse to its home ports on 2nd December.

**MEDITERRANEAN FLEET.**—The second part of the Mediterranean summer cruise began on 3rd September, when the fleet left under Admiral Sir Frederick Field. Independent programmes were carried out by most of the ships and flotillas, part going to the Adriatic, and part to places in Greece and Turkey. The presence of the majority of the ships at Corfu from 23rd to 30th October afforded an opportunity probably the first of its kind, for correspondence for the units to be sent from London by the England-India Air Mail, as Corfu is a port of call of this service. The cruise ended on 1st November, when the "Queen Elizabeth" class were ordered home.

**VISIT TO TURKEY.**—For the first time since peace was signed between Great Britain and Turkey, a squadron of the Mediterranean Fleet under Admiral Field, consisting of the "Queen Elizabeth," "Courageous," three destroyers, and the sloop "Bryony," visited Constantinople from 12th to 20th October. On the 14th, the Admiral visited Mustafa Kemal Pasha at Angora.

**AMERICA STATION.**—The "Despatch," flagship of Vice-Admiral Sir Cyril Fuller, and "Capetown" have been in Canadian and Nova Scotian waters during most of the quarter, and the latter ship visited Marblehead, Massachusetts. The "Colombo," returning from a stay off British Columbia, called at Marshfield, Eureka, Catalina, San Pedro and other foreign places during her voyage down to the Canal Zone in September. The "Caradoc," cruising up the South-East coast of America, called at Rio Grande do Sul, Rio de Janeiro, Pernambuco, and Para; and the "Durban," on the Western seaboard of South America, visited Valparaiso, Antofagasta, Mollendo, and Callao.

**AFRICA AND EAST INDIES.**—Local cruises were made by the "Calcutta," the new Africa Station flagship; and by the "Emerald" and "Enterprise," in the East Indies. The last-named visited Cuddalore, Pondicherry, Vizagapatam, Coconada and Madras during September.

#### ORGANIZATION AND DISTRIBUTION.

**MEDITERRANEAN WITHDRAWALS.**—The Admiralty announced on 2nd August that it had been decided to transfer H.M. ships "Barham," "Malaya," "Queen Elizabeth" and "Valiant" to the Atlantic Fleet, leaving H.M.S. "Warspite" as Fleet Flagship of the Mediterranean. The transfer is to take place as soon as practicable after the completion of the Mediterranean summer cruise, approximately in the middle of November. The constitution of the Battle Squadrons of the Mediterranean and Atlantic Fleets after this transfer will be as follows:—

*Mediterranean Fleet* :—1st Battle Squadron : "Queen Elizabeth," Fleet Flagship (but "Warspite" will remain as Fleet Flagship until the return of "Queen Elizabeth" after long refit) ; "Revenge," Flag of Vice-Admiral, 1st Battle Squadron, and Second-in-Command, Mediterranean Fleet ; "Royal Oak," "Royal Sovereign," "Ramillies" and "Resolution."

*Atlantic Fleet* :—2nd Battle Squadron : "Nelson," Fleet Flagship ; "Rodney," "Barham," Flag of Rear-Admiral, 2nd Battle Squadron ; "Malaya," "Valiant" and "Warspite."

3rd Battle Squadron : "Emperor of India," Flag of Rear-Admiral, 3rd Battle Squadron ; "Marlborough."

THIRD CRUISER SQUADRON RELIEFS.—H.M.S. "Cardiff," after ten years' duty as flagship of the Third Cruiser Squadron, Mediterranean, returned to Portsmouth at the end of August and transferred her experimental flagship and Admiral's fittings to the "Curacoa," which commissioned on 4th September to relieve her, leaving for Malta on the 11th. The flag of Rear-Admiral A. J. Davies was flown temporarily in the "Ceres." This ship was ordered to arrive in England on 24th October, and the "Calypso" was to commission in November to relieve her. The "Calliope" was also ordered to return home in November, and the "Curlew" to commission at Chatham for duty in her place.

#### FLEET AIR ARM.

OBSERVERS' COURSE RESULTS.—A new Fleet Order states that the appointments of Acting Observers, afloat, on completion of their qualifying course at Lee-on-Solent, now indicate whether the officers are entitled to the higher rate of allowance or not, i.e., whether they are "qualified in Air W/T" or "not qualified in Air W/T." The results of the Observers' courses will therefore no longer be promulgated by letter to senior officers and ships.

OBSERVERS QUALIFIED IN METEOROLOGY.—Observers who have undergone the twelve weeks' course in Meteorology are to have further training :—

- (a) After about two years' experience of meteorological work in a carrier, an advanced course at the Meteorological Office at the Air Ministry.
- (b) Opportunity to visit that Department for one or two days at regular intervals.

TELEGRAPHISTS' SERVICE.—As a general rule, telegraphist ratings, after qualifying as telegraphist air gunners, will serve for a period equivalent to a commission of 2½ years in the Fleet Air Arm, after which they will revert to general service in the Fleet for a short period (approximately twelve months or less). Before, however, being drafted to general service, and if drafting requirements permit, they will undergo courses in the Signal School. After general service, they will return to the Fleet Air Arm as required for a further commission ; and while remaining attached to the F.A.A., will continue alternate periods of service as above.

#### NEW ZEALAND DIVISION OF THE ROYAL NAVY.

Commodore Geoffrey Blake, C.B., D.S.O., late Chief of Staff, Atlantic Fleet, assumed command of the New Zealand Naval Division and Station on 9th September, in succession to Commodore Swabey.

During the recent cruise of the Division to Australian ports (referred to in the last JOURNAL) it was announced that of the 808 officers and men in the "Dunedin" and "Diomedé," 322 were New Zealanders and the remainder on loan from the Royal Navy.

The "Diomedé," Captain L. V. Wells, D.S.O., left Auckland on 2nd October for Chatham, via the Pacific Islands and the Panama Canal. During her absence from Station, the New Zealand Division will include only one cruiser.

#### ROYAL NAVAL RESERVE.

ANNUAL BANQUET.—The Royal Naval Reserve Officers' Banquet was held at the Hotel Victoria on Friday, 18th October. Captain Sir Walter Baynham, K.B.E., R.D., R.N.R., was the President; and Captain Frederic E. Storey, R.D., R.N.R., the Vice-President. The principal guests were Admiral of the Fleet Sir Charles Madden, First Sea Lord; and Vice-Admiral Sir John Kelly, Admiral Commanding Reserves.

The First Sea Lord responded to the toast of the Guests, and in conclusion, proposed that of "The Royal Naval Reserve," which was responded to by the Vice-President, who, in his capacity as President of the R.N.R. Officers' Club of Liverpool, the "Sea Urchins," presented his Club's Emblem, a little gold sea-urchin, to the late Admiral Commanding Reserves, Vice-Admiral Sir Arthur A. M. Duff, K.C.B.

#### ROYAL NAVAL VOLUNTEER RESERVE.

A.D.C. TO THE KING.—Captain William Maples, V.D., R.N.V.R., has been appointed a Royal Naval Volunteer Reserve Aide-de-Camp to the King, in succession to Captain H. J. Craig, C.B.E., V.D., who was placed on the retired list on 30th September. Captain Maples, who has served for twenty-five years in the R.N.V.R., succeeded Sir Harry Mainwaring in command of the Mersey Division in 1922.

TYNE DISTRICT.—Commander E. W. Swan, O.B.E., V.D., R.N.V.R., has been appointed in Command of the Tyne District, on the retirement of Captain Craig, to date 30th September.

#### ROYAL MARINES.

SALARY OF ADJUTANT-GENERAL.—An Order in Council, dated 15th August, published in the *London Gazette* on 20th August, stated that the Admiralty were of opinion that a higher rate of salary than £2,100 a year should be payable to the Adjutant-General, Royal Marines, when he holds the rank of Lieutenant-General or above. Sanction was given by the new Order, with effect from 5th July, 1929, of payment to this officer, when of the rank of Lieutenant-General or above, of a salary at the standard rate of £2,500, such rate, in like manner to that already laid down, to be subject to revision periodically in accordance with the cost of living.

#### DOMINION NAVIES.

##### ROYAL AUSTRALIAN NAVY.

ESTIMATES ECONOMY.—A reduction of £800,000 in the estimates for Australian defence has been decided upon, but the exact proportion to fall upon the Navy vote, and the manner in which it will be realised, remain to be seen.

**CRUISER VOYAGES.**—The "Australia" and "Canberra," the former flying the flag of Rear-Admiral E. R. G. R. Evans, arrived at Brisbane on 23rd August and at Hervey Bay on the 31st. Here the "Canberra" left to make a circuit of Australia, calling at Thursday Island, Port Darwin, Geraldton, Fremantle, Albany, Adelaide, Port Phillip, and Jervis Bay, returning to Sydney on 29th November.

**ADVANCED GUNNERY PRIZE.**—The Commonwealth Naval Board have approved the award of a prize of books or instruments to the value of £20 to Lieutenant H. J. Buchanan, R.A.N., in consequence of his obtaining first place in the examination held on completion of the advanced gunnery course at the R.N. College, Greenwich, in March last.

#### ROYAL CANADIAN NAVY.

**SUMMER CRUISES.**—The destroyers "Champlain" and "Vancouver" made cruises for training purposes from their bases at Halifax and Esquimalt during the summer. The former visited Sydney, N.S., and Quebec, while the latter was seen at Seattle.

#### FOREIGN NAVIES

##### ARGENTINA

**FLOTILLA LEADERS COMPLETED.**—On 3rd September, the flotilla leaders "Mendoza" and "Tucuman," the first of three built by J. Samuel White & Co., Ltd., at East Cowes, were officially handed over to the Argentine Navy, and accepted after inspection by Rear-Admiral Gallindez, Chief of the Argentine Naval Commission in Europe. The "Mendoza" left Cowes on 12th October for the Argentine.

##### BELGIUM

**SALE OF TORPEDO BOATS.**—It was announced at the end of August that Belgium was offering for sale the ten torpedo boats which were in her Navy at the time of its disbandment in 1926, and which had been laid up at Bruges. These were small ex-German vessels built during the war.

##### CHILE

**NEW DESTROYERS AND SUBMARINES.**—The destroyers "Videla" and "Aldea," the last of the six built for Chile by J. I. Thornycroft & Co., Ltd., at Woolston, left on 18th August for Valparaiso. All six vessels carried out satisfactory trials, the contract requirements being exceeded in each case. On 24th August, the submarine "Capitan Thompson" was handed over on completion at Messrs. Vickers' works at Barrow.

##### CHINA

**BRITISH NAVAL MISSION.**—The British Naval Mission to China alluded to in the August number of the JOURNAL is to consist of a Commander with the rank of Captain in the Chinese Navy, a Lieutenant (N) with the rank of Lieutenant-Commander, one Warrant Engineer and four lower-deck specialists.

## DENMARK

**MISSING TRAINING SHIP.**—The search ship "Mexico," on her return to Cape Town in July, had no definite tidings of the missing training ship "Köbenhavn," which has not been heard of since leaving Montevideo on 14th December for Australia with a large number of Naval Cadets on board. The "Mexico" reported that the sailing ship which passed Tristan da Cunha on 21st January has been definitely identified as the "Köbenhavn" by the white band painted around the stern. The mystery of the disappearance is deepened by the entire absence of wreckage. On 8th September, it was announced that the search for the missing vessel had been abandoned.

## FRANCE

**SAIGON SUBMARINE BASE.**—It is reported to be the intention to construct a submarine base at Saigon, with a view to increasing the naval strength of French Indo-China, and particularly for the addition of submarine craft to the Far Eastern Forces. It is intended that the submarines "Joessel," "Fuiton" and "Lagrange" with the depot ship "Vitri-le-Francois," will form the submarine escadrille to be based at Saigon. They will probably leave for the Far East early next year.

**FLOTILLA LEADERS' TRIALS.**—On trial off Lorient in September, the flotilla leader "Verdun" made a speed of 40.2 knots. This was with 80,000 horse-power. She was designed for 36 knots with 70,000 horse-power. The "Verdun" is one of three leaders laid down in 1927. The "Valmy," one of her sister-ships, made a speed of 39.58 knots. The achievement of the "Verdun" is claimed as a world's record.

**SUPPLY SHIP FOR AIRCRAFT.**—The "Pollux," an ex-Russian ice-breaker, formerly used as a mine-layer, has been converted for use as a supply ship for aircraft in addition to her mine-laying duties.

**CRUISE OF THE "TOURVILLE."**—In the course of her world cruise, the new 10,000-ton cruiser, "Tourville," visited New Zealand and Australian ports during August and September, calling at Auckland, Wellington, Sydney, Hobart, Melbourne, and Fremantle. She was due at Madras early in November.

**DEATH OF VICE-ADMIRAL FROCHOT.**—Vice-Admiral Frochot, who had recently been appointed to command the First Squadron of the Navy, and was to have hoisted his flag in the "Provence," on 1st October, died from appendicitis at Dole, in the Jura, on 12th August. He has been succeeded by Vice-Admiral Durand-Viel. Vice-Admiral Frochot, who was fifty-seven, commanded submarines before the late war, during which he had charge of the Sixth Squadron, and also commanded the French flotilla in the Adriatic, where he organized a successful anti-submarine campaign. In 1923-25, he was Chief of the Naval Division in the Far East, after which he became Director of the Maritime Aviation Service at the Ministry of Marine.

## GERMANY

**SALVAGE OF THE "KAISER."**—The ex-German battleship "Kaiser," which was salvaged on 20th March last, and from which the heavy gun turrets had to be cut off while she lay in an upside-down position, was towed out of Scapa Flow, bottom upwards, on 20th July, and arrived three days later at Rosyth for breaking up. Messrs. Cox & Danks, Ltd., the salvage firm, have since begun operations on the light cruiser "Bremse."

**COMPLETION OF THE "KONIGSBERG."**—The second of the new cruisers, the "Konigsberg," on trial off Danzig reached a speed of 34 knots, two knots above the designed rate. At 40 degrees elevation, it is claimed that the new model 5.9-inch guns have an extreme range of 20,000 yards. Auxiliary Diesel engines for use at cruising speeds are fitted, and there is a stern port for dropping mines.

**CRUISE OF THE NEW "EMDEN."**—In the course of her world voyage, the cruiser "Emden" received a cordial welcome at Auckland and Wellington in July. At a Government luncheon on 8th July, Sir Joseph Ward, the Prime Minister, said that Germany and New Zealand were alike signatories of the Kellogg Pact and members of the League of Nations; and they were making a united and honest attempt to solve the problems of international peace and security. Captain de la Perière expressed, on behalf of the ship's officers, their sincere thanks for the cordial reception given them.

**CIVIL FLYING SCHOOL AS A POTENTIAL NAVAL AIR SERVICE.**—During the debate on the Budget, a Socialist member called attention to the Flying School, Seeverkehrs A.G., on the island of Norderney. This, he asserted, was a cloak to disguise a war flying school for the German Navy. The School is in charge of a retired Captain in the German Navy, the instructional personnel consists of former naval flying men, and the flying personnel includes naval officers and men who are undergoing a course. The object, he alleged, was the training of pilots, observers and aerial gunners. The average number of pilots is from forty to fifty, and the course lasts for one year. Appointments to it do not follow the usual custom of seconding, but are made by retirement from the active service, under some pretext, for a year. Those undergoing the course receive pay, and on its completion re-enter the Navy, and the time spent in training is reckoned towards a pension.

**DESPATCH BOATS AS RESERVE TORPEDO CRAFT.**—Herr Stoecker further alluded to the secret Schnellboote of the Kiel Fiord. Although supposed to be harmless despatch boats, these, he alleged, were in fact torpedo-boats with a torpedo tube and two torpedoes; a speed of 40 knots and a radius of action of 420 miles. He also stated that they were used as such during the last naval manœuvres.

## GREECE

**NEW DESTROYERS ORDERED.**—A contract was signed on 2nd October with the Italian firm of Odero for the construction of two flotilla leaders of the "Dardo" type at a cost of about £500,000. The vessels are to have a displacement of 1,450 tons, and a maximum speed of 40 knots. The armament is to consist of four 4.7-inch, three 2-pdr., A.A. guns, and six 21-inch torpedo tubes. The first ship is to be delivered in twenty months, and the second in twenty-two months.

## ITALY

**NAVAL ESTIMATES.**—Giving details of the naval estimates, Rear-Admiral Sirianni, Under-Secretary of State for the Navy, said that the current estimates would be about £13,391,300. These were justified by the growing importance of Italy, her increased commerce, industry and mercantile fleet. The latter, he stated, amounted to 3,541,426 tons in 1928 as compared with 1,688,296 tons in 1914.

By the end of 1932 and 1933 the fleet would be entirely replaced, and the principal units of new construction would be:—

6 cruisers	10,000 tons
6 cruisers	5,200 tons
12 leaders	2,000 tons
25 destroyers	2,000 tons.

**REORGANIZATION OF THE FLEET.**—Certain changes have recently been announced in the organization of the Italian Fleet. The 1st Squadron is based at Spezia and is being strengthened by the substitution of the 10,000-ton cruisers "Trento" and "Trieste" for the old ex-German cruisers "Bari" and "Tarento." The third ship of the "Trento" class and three ships of the "Zara" class will join the 1st Squadron when they are completed. The four "Condetteri" will probably also join this Squadron. Older units are transferred to the 2nd Squadron which is based at Tarento. The two remaining fully-manned battleships form one Division of the 2nd Squadron.

**CRUISERS IN ENGLAND.**—The three ships of the Italian Training Squadron, the "Pisa," "Ferruccio" and "Colombo," under the command of Admiral of Division, Ettore Rota, arrived off Gravesend on 21st August, and remained a week, during which their officers and cadets visited London, and many mutual visits of an official and unofficial character were paid. The Squadron afterwards went to Le Havre, and then to Portsmouth to be present during the Schneider Trophy week. Thereafter the programme included Vigo, La Maddalena, Spezia and Leghorn. At the last named is the Italian Naval Academy.

**VISIT OF BRITISH NAVAL ARCHITECTS.**—Members of the British Institution of Naval Architects visited Italy in September under the presidency of Admiral of the Fleet Lord Wester Wemyss. At Spezia, three destroyers were placed at their disposal for a cruise. One of these destroyers had a new device for steering. This was a rudder working in a slotted recess which could be completely housed, thus reducing resistance, and for which it was claimed that it had a 50 per cent. greater efficiency in reducing the turning circle of the ship.

## JAPAN

**NEW 10,000-TON CRUISERS.**—The "Nachi" carried out high speed trials on 25th June last, running 1,500 nautical miles at 70/100 per cent. full speed. The trials were stated to be very satisfactory. The "Nachi," "Haguro," "Myoko" and "Ashigara" are now completed and form the 4th Squadron of the 2nd Fleet. The present 4th Squadron of battle cruisers has been transferred to the 1st Fleet.

**RECONDITIONING OF BATTLE CRUISERS.**—The work of reconditioning Japan's four battle cruisers was to have been completed by 1932, but owing to the necessity for economy the date has now been extended to the year 1936-37. The "Haruna," the first to be taken in hand, was reconditioned in the latter part of last year. She has been fitted with bulges and new boilers, her tonnage displacement being increased by nearly 3,000 tons (not 30,000 as reported in the February JOURNAL). The "Kongo" and "Kirishima" are now in hand at Yokosuka and Kure respectively, and the "Hiyei" will be reconditioned in due course. The last three, it is reported, are to be converted into oil burners only, although the "Haruna" is still equipped to burn oil and coal.

**NEW AIRCRAFT CARRIER.**—The new aircraft carrier, which is to be named "Hyojo," is a small vessel of 8,200 tons. It is expected that she will be laid down shortly.

**GIFT TO NAVAL COLLEGE.**—The British Board of Admiralty has presented a portrait of Admiral Sir Archibald Douglas to the Imperial Naval College at Etajima. Admiral Douglas was the head of the Naval Mission to Japan in 1873, and first director of the College, then at Yedo. The presentation was made by the Second Sea Lord, Vice-Admiral Sir Michael Hodges, who said he hoped the picture would form one more link between the two great Services and be a token of the esteem in which the British Navy held their Japanese brothers of the sea. The portrait was accepted by Commander Prince Shimadzu, Naval Attaché in London.

#### NAVAL AIR SERVICE

During the present fiscal year the number of Flight Squadrons is being raised from 14 to 15½, and another 1½ are to be added next year, bringing the total up to 17 Squadrons by 1931.

**AVIATION SCHOOL.**—A Naval Aviation Preparatory School has been established at Yokosuka. It is intended to train Cadets for the Naval Air Service instead of drawing on the ordinary naval personnel. Seventy to eighty students of from 15 to 17 years of age will enter this Institution each year for a three year course.

**NEW NAVAL AIR STATION.**—The work has commenced on the new Naval Air Station at Tateyama, near the Eastern entrance to Tokyo Bay. It is believed that on completion of this Station it will become Japan's largest Naval Air Base, and that most of the units now based on Oppama near Yokosuka will be transferred to it.

#### SPAIN

**NAVAL ESTIMATES.**—The Naval Estimates for 1929 amount to 260,000,000 pesetas as compared with 280,000,000 last year.

The vessels under construction at present consist of:—

- Two 10,000-ton cruisers.
- One 8,000-ton cruiser.
- Three large destroyers.
- Two 1,000-ton submarines.

The fleet in being consists of 2 battleships, 7 cruisers, 8 destroyers, 22 torpedo-boats and 14 submarines, besides a number of auxiliary vessels.

It is anticipated that more money will be available for the fleet when the work of reorganizing the coast defences has been completed. This work includes new Naval Air Stations at Vigo, Cartagena and Port Mahon.

**FLEET MANŒUVRES.**—The Spanish Fleet carried out annual manœuvres which began on 15th September. The first phase ended ten days later. For the second phase, two fleets, White and Black, were organized. White, with a force of cruisers, submarines and aircraft, was in possession of the Balearic Islands, and had command of the coast of Valencia. Black, with battleships, had its bases at Cartagena and Alicante, and was set the task of landing a force to recover the Islands. For the disembarkation, a number of small craft originally built for British use at the Dardanelles, and purchased by Spain after the war for use on the coast of Morocco, were employed. For the first time, press correspondents were allowed in the fleet during the manœuvres, to give the public an insight into and arouse interest in the work and progress of the Navy.

## TURKEY

THE BATTLE CRUISER "YAVOUZ."—It is reported that the reconditioning of the "Yavouz," the ex-German battle cruiser "Goeben," is nearing completion, and that the ship will be ready for trials before the end of the year.

NEW CONSTRUCTION.—Orders have now been placed in Italy for a new construction programme, which is due for delivery by the 1st May, 1931. The programme includes :—

Two destroyers to be built at Ansaldo.

Two submarines to be built at Manfalcone.

Three coastal motor boats to be built at S.V.A.N., Venice.

## UNITED STATES

LAUNCH OF THE "NORTHAMPTON."—On 5th September, the cruiser "Northampton" was launched at the Bethlehem Works, Quincy, Massachusetts. She is being fitted as a flagship, and on completion will become leader of the 5th Light Cruiser Division Scouting Fleet. The remaining ships of the Division will be the "Pensacola," "Salt Lake City," "Chester" and "Houston."

LAUNCH OF THE "HOUSTON."—On 7th September, the "Houston" another of the eight cruisers authorised by the Act of 18th December, 1924, was launched at Newport News. Her contract date for completion is the same as that of the "Northampton," viz., 13th June, 1930.

CRUISERS COMPLETING.—Of the two cruisers of the 1924 Act which were laid down in 1926, the first, the "Salt Lake City," carried out her builders' trials on 31st August, and her standardisation trials on 11th September. She was due to be completed about the middle of October. The second ship, the "Pensacola," which was launched on 24th April, 1929, was reported to be 85.1 per cent. complete on 31st July.

"OKLAHOMA" MODERNISED.—The work of modernising the battleship "Oklahoma" (laid down in 1912 and commissioned in 1916) was completed at Philadelphia Navy Yard in August, when the vessel left for a shakedown cruise and to carry out compass calibration and machinery tests. Her sister-ship, the "Nevada," is completing modernisation at the Norfolk Navy Yard. When ready, the two ships will join the 3rd Division of the Battle Fleet, of which the U.S.S. "New York," which has already been modernised, is flagship.

REPLACING DESTROYERS.—The Navy Department announced on 13th September that the condition of the boilers of a number of destroyers in service rendered further operation inadvisable without extensive replacement. As they were of war construction, with some of their machinery obsolete, it was proposed to remove them from the Navy List and substitute other destroyers which had been laid up at Philadelphia and San Diego.

NEW COASTGUARD CUTTERS.—The names of "Itasca," "Sebago" and "Saranac" have been assigned to the three new first-class Coastguard cruising cutters which are being built by the General Engineering and Drydock Company, at Oakland, California. These vessels of the "Lake" type will be 250 feet long, with a displacement of 2,000 tons, and with turbines and electric drive will have a speed of 16 knots and a radius of action of 8,000 miles. Their armament includes two 5-inch and two 3-inch A.A. guns.

**CRUISERS FOR SALE.**—The following old cruisers have been placed on the sale list:—

"Huntington," "Frederick," "Pueblo," "Huron" ..	13,680 tons.
"Chattanooga," "Des Moines" .. .. .	3,200 ..
"Salem," "Birmingham," "York" .. .. .	3,750 ..
"Charleston," "St. Louis" .. .. .	9,700 ..
"Albany," "New Orleans" .. .. .	3,430 ..

**EUROPEAN FORCE DISBANDED.**—As from 5th September, 1929, the United States Naval Forces, Europe, ceased to exist as a separate unit. Vice-Admiral John H. Dayton hauled down his flag on that date in the cruiser "Raleigh" in Hampton Roads, and applied to retire, after forty years' service. The "Raleigh" joined the Light Cruiser Divisions, Scouting Fleet. It is understood that the vice-admiralty thus made vacant will not be filled for the present, and may be assigned to the commander of the Light Cruiser Divisions when these are augmented by the accession of the cruisers "Salt Lake City," "Pensacola," "Chester," "Northampton" and "Houston."

## ARMY NOTES

### REGULAR FORCES

#### HOME

APPOINTMENTS AND PROMOTIONS.—H.M. The King has approved of the following appointments:—Captain His Royal Highness the Duke of Gloucester, K.G., G.C.V.O., 10th Royal Hussars, to be Personal Aide-de-Camp to The King; Colonel (temporary Brigadier) R. J. F. Hayter, C.B., C.M.G., D.S.O., and Colonel H. F. E. MacMahon, C.B.E., M.C., Indian Army, to be Aides-de-Camp to the King.

Field-Marshal Sir George Milne, G.C.B., G.C.M.G., D.S.O., D.C.L., LL.D., Colonel Commandant, Royal Regiment of Artillery, to be Master Gunner, St. James' Park, in succession to the late General the Lord Horne, G.C.B., K.C.M.G., D.C.L., LL.D., Colonel Commandant, Royal Horse Artillery, Colonel, The Highland Light Infantry.

General Sir Walter P. Braithwaite, G.C.B., Aide-de-Camp General to The King, to be Colonel of The Somerset Light Infantry (Prince Albert's), in succession to Lieutenant-General Sir Thomas D'O. Snow, K.C.B., K.C.M.G., who has resigned the Colonelcy.

Lieutenant-General Sir Edward A. Fanshawe, K.C.B., retired pay, to be Colonel Commandant, Royal Horse Artillery, and Major-General Sir Herbert G. Smith, K.C.B., retired pay, to be Colonel Commandant, Royal Artillery.

Major-General G. A. Weir, C.B., C.M.G., D.S.O., to be Colonel, 3rd Carabiniers (Prince of Wales's Dragoon Guards), in succession to Field-Marshal Sir William Robertson, Bart., G.C.B., G.C.M.G., K.C.V.O., D.S.O., D.C.L., LL.D., Colonel, Royal Horse Guards (The Blues).

Major-General Sir Alfred P. Blenkinsop, K.C.B., C.M.G., to be Colonel Commandant, Royal Army Medical Corps.

General Sir Philip Walhouse Chetwode to be Commander-in-Chief in India in succession to Field-Marshal Sir William Riddell Birdwood.

With His Majesty's approval the Secretary of State for India has invited Field-Marshal Sir W. Birdwood, who will complete five years' tenure of the appointment of 5th August, 1930, to serve for a further period of three months from that date.

Lieutenant-General Sir P. P. de B. Radcliffe, K.C.M.G., C.B., D.S.O., has been appointed General Officer Commanding-in-Chief, Scottish Command, in succession to General Sir W. E. Peyton, K.C.B., K.C.V.O., D.S.O., whose tenure of the appointment expires on 19th February, 1930.

Major-General B. R. Kirwan, C.B., C.M.G., has been appointed Master-General of the Ordnance in India, in succession to Lieutenant-General Sir Edwin H. de V. Atkinson, K.C.B., K.B.E., C.M.G., C.I.E., whose tenure of the appointment expires on 1st April, 1930.

Colonel W. S. Anthony, C.M.G., has been selected for the appointment of Director-General, Army Veterinary Services, War Office, with the rank of Major-General, with effect from 1st December, 1929, in succession to Major-General H. T. Sawyer, C.B., D.S.O.

The following promotions have been effected :—Major-General A. E. Wardrop, C.B., C.M.G., late Royal Artillery, and Major-General H. B. Fawcus, C.B., C.M.G., D.S.O., M.B., late Royal Army Medical Corps, to be Lieutenant-General.

Colonel W. R. Blackwell, C.M.G., late Royal Army Medical Corps, to be Major-General.

**DISBANDMENT OF UNITS.**—Approval has been given for the disbandment of the 36th (Fortress) Company, Royal Engineers, and Nos. 1 and 2 Horse Transport Companies of the Royal Army Service Corps.

**CHANGES OF DESIGNATION.**—The King has approved of the Aden (Fortress) Company, Royal Engineers, being in future designated the 20th (Fortress) Company, Royal Engineers.

**BADGE OF ROYAL ARMY PAY CORPS.**—The King has approved of the Royal Army Pay Corps being permitted to adopt the motto "Fide et Fiducia," and to embody this motto in the regimental badge of the Corps.

**WITHDRAWAL OF THE BRITISH TROOPS FROM THE RHINE.**—The withdrawal of the British troops from the Rhine commenced on 14th September. The evacuation is being spread over a period of approximately three months.

The order in which units are arriving home and the stations to which they are proceeding is as follows :—

2nd Battalion, The Leicestershire Regiment	For Catterick.
2nd Battalion, The Dorsetshire Regiment	Portland.
19th Field Brigade, Royal Artillery	Newcastle, Sheffield and Larkhill.
8th Hussars	Aldershot.
Section (Armoured Cars) 3rd Battalion, Royal Tank Corps	Lydd.
2nd Battalion, The Royal Welch Fusiliers	Tidworth.
1st Battalion, The Prince of Wales's Volunteers	Catterick.
Royal Corps of Signals	Catterick.
7th Field Company, Royal Engineers	Colchester.
28th, 29th and 34th (M.T.) Companies, Royal Army Service Corps	Catterick and Aldershot.
2nd Battalion, The Hampshire Regiment	Catterick.
2nd Battalion, The Royal Fusiliers	Colchester.

In consequence of the return of the troops from the Rhine, the following moves of units at present in this country will also take place :—

1st King's Dragoon Guards	From Aldershot to Tidworth.
3rd Carabiniers	Tidworth to Canterbury.
39th Field Battery, Royal Artillery	Larkhill to Newcastle.
13th Field Brigade, Royal Artillery	Edinburgh and Dunbar to Aldershot.
59th Field Company, Royal Engineers	Catterick (temporarily) to Bordon.
2nd Battalion, The Cheshire Regiment	Tidworth to Aldershot.
3rd Battalion, Grenadier Guards	Aldershot to London District.
1st Battalion, The Essex Regiment	Colchester to Pembroke Dock.

**SUPPLEMENTARY RESERVE: SHORTAGE OF OFFICERS.**—Numerous vacancies exist in the Supplementary Reserve of Officers and Commanding Officers are being urged to endeavour to obtain such officers as are still required to complete the strength of their regiments up to approved establishments. At present, a few cavalry and infantry regiments have no Supplementary Reserve officers at all on their strength, and several others have only one towards an establishment of nine. The Royal Engineers are in need of candidates qualified in general engineering; the Royal Tank Corps and Royal Army Service Corps of candidates who have passed through technical and mechanical schools or are connected with the motor industry; and the Royal Army Medical Corps of qualified medical men.

The Supplementary Reserve has been organized with a view to bringing the Regular Army up to war establishment on mobilization, and its officers are liable to be called out on service when the Army Reserve is called out by Proclamation. Officers who have completed the prescribed training receive an annual gratuity of £25, in addition to pay and allowances when on duty; an outfit grant of £50 is also given to those appointed to the Cavalry, and a similar grant of £40 to those appointed to other arms.

Candidates for commissions must have attained the age of 18 and not be over 30, and have permanent residence in Great Britain or Northern Ireland.

The preliminary training in the case of the Cavalry and Royal Tank Corps is for two, three or four months, and in the case of the Foot Guards and Infantry, for one, two or three months according to whether candidates hold Certificate "B" Officers Training Corps, Certificate "A" Officers Training Corps, or no certificate at all. This preliminary training may be spread over a period of four years provided that not less than one month's training is carried out in any one year, and the training is in consecutive years. The period of annual training for these arms is three weeks; but this period again may be reduced to one week a year or two weeks in alternate years, when the period of preliminary training has been extended by three months. Details of the training periods for other branches and further information are given in the pamphlet "Supplementary Reserve of Officers—Conditions of Service."

**ARMY STAFF COLLEGES.**—All officers on the Indian Establishment will, in future, be eligible to compete at the same examination for admission to the Staff College at either Camberley or Quetta, and will be eligible for entry to either College by competition or nomination if qualified.

**TECHNICAL CAREERS FOR BOYS.**—Over 2,000 boys are now being trained at Chepstow, Gosport, Catterick, Woolwich and other Centres for technical work in the Regular Army. Next winter there will be vacancies for approximately one hundred and fifty more, who will be selected in November by competitive examination. Successful candidates will spend three or four years in learning one or other of a variety of trades, including those of armourer, artificer, carpenter, draughtsman, fitter and signal operator. During apprenticeship boys will be maintained free of cost to their parents, and in addition, will receive payment of 11d. a day with increases according to their efficiency up to a possible maximum of 1s. 7d. a day, these rates being for a full 7-day week.

**WORK FOR DISCHARGED SOLDIERS.**—During August, 213 soldiers completed courses of instruction at the Army Vocational Training Centres, at Hounslow, Aldershot and Chisleton, and 177 obtained immediate employment on leaving the Colours. Twenty-three qualified for Oversea Settlement, while the others took up carpentry, plastering, painting, bricklaying, boot repairing, motor mechanism, positions of trust, private service and other occupations.

## ARMY IN INDIA

RE-DISTRIBUTION OF DUTIES AT ARMY H.Q.—A re-allocation of duties has been effected at Army Headquarters in India between the Quartermaster-General and the Master-General of Supply. The designation "Master-General of Supply" has been changed to "Master-General of the Ordnance in India," and the designation "Director of Equipment and Ordnance Stores" to that of "Director of Ordnance Services." Consequent on this re-organization, the following new appointments have been added to the staff of the Master-General of the Ordnance in India:—(i) Deputy Master-General of the Ordnance (Director of Technical Organization) with rank of Major-General or Brigadier; (ii) Assistant Civil Engineer Adviser. One of the most important duties of the re-organized branch will be to co-ordinate the policy as regards reserves and mobilization, and these duties have been allotted to a new Directorate of Technical Organization under the direct control of the Deputy Master-General of the Ordnance.

## TERRITORIAL ARMY

CHANGE OF DESIGNATION.—The King has approved of the designation of the 218th (Hampshire) Field Battery, and the 219th (Hampshire) Field Battery of the 95th (Hampshire Yeomanry) Field Brigade, Royal Artillery (Territorial Army), being altered respectively to 218th (Bournemouth) Field Battery, and 219th (Isle of Wight) Field Battery, of the 95th (Hampshire Yeomanry) Field Brigade, Royal Artillery (Territorial Army); also of the 94th (Dorset Yeomanry) Army Field Brigade, Royal Artillery (Territorial Army), being in future designated the 94th (Queen's Own Dorset Yeomanry) Army Field Brigade, Royal Artillery (Territorial Army).

## DOMINION FORCES

REGIMENTAL ALLIANCES.—The King has approved of the following regimental alliances:—

- The 11th Infantry (Rand Light Infantry), Active Citizen Force, Union Defence Forces, to The Duke of Cornwall's Light Infantry;
- The 51st Battalion, Australian Infantry, Australian Military Forces, to the King's Own Yorkshire Light Infantry;
- The Wellington East Coast Mounted Rifles, New Zealand Military Forces, to the 7th Queen's Own Hussars;
- The 13th Battalion Australian Infantry, Australian Military Forces, to The Somerset Light Infantry (Prince Albert's);
- The 3rd Infantry (Prince Alfred's Guard), Active Citizen Force, Union Defence Forces, to The Royal Scots Fusiliers;
- The 18th Battalion, Australian Infantry, Australian Military Forces, to The South Wales Borderers;
- The 24th Battalion, Australian Infantry, Australian Military Forces, to The South Wales Borderers;
- The Governor General's Foot Guards, Non-Permanent Active Militia of Canada, to the Coldstream Guards;
- The Vancouver Regiment, Non-Permanent Active Militia of Canada, to The Buffs (East Kent Regiment);
- The Victoria Rifles of Canada, Non-Permanent Active Militia of Canada, to The King's Royal Rifle Corps;
- The Manitoba Rangers, Non-Permanent Active Militia of Canada, to The Sherwood Foresters (Nottinghamshire and Derbyshire Regiment).

## FOREIGN

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## FRANCE

**THE ONE YEAR'S SERVICE BILL.**—The following is a summary of a report by the Minister of War showing the results of recruiting from 1st October, 1928, to 1st April, 1929, of the various categories of personnel required to enable the One Year's Service Bill to be introduced:—

(a) *Militaires de carrière.*

Number of engagements during the 6 months.	Approximate increase during 6 months.	Total number now serving.	Total number required.	Number short.
8,150	6,000	89,000	106,000	17,000

This is considered satisfactory.

(b) *Agents Militaires.*

—	1,493	7,584	15,000	7,416
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Recruiting continues, and it is considered that the present six months will show a further increase.

(c) *Employés Civils.*

—	2,000	26,000	30,000	4,000
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This is very satisfactory.

(d) *Gardes Républicains Mobiles.*

—	1,200	4,906	15,000	10,094
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Although there is a large shortage, this is apparently due to the fact that recruiting has been slowed down by the lack of accommodation. There is no dearth of candidates. It is held that the increase in recruiting is sufficiently steady to warrant the assumption that the One Year's Service Bill will be put into force as anticipated.

**INCREASE OF PAY TO PROFESSIONAL SOLDIERS.**—In order to stimulate the recruiting of professional soldiers, particularly in the Army in Africa, a decree dated 29th June, 1929, raises the pay of Frenchmen (*de carrière*) serving in the Foreign Legion and the various disciplinary units in Africa.

The re-engagement bounties of Frenchmen serving in Algeria, Tunis and the Levant, of foreigners in the Legion and of North African natives are also raised.

Various other small increases in pay of bounties are made both to re-engaged Frenchmen and natives in order to make the life of a professional soldier more attractive.

**OFFICIERS D'ADMINISTRATION.**—A law has been published, dated 9th July, 1929, absorbing *officiers d'administration* into the different arms of the service.

It is interesting to note that those officers who are absorbed will not be debarred from promotion during the next three years owing to not having done the full time in command, but that after 9th July, 1930, a period of six months of command will be necessary before promotion.

## JAPAN

**AIR DISASTER IN TOKYO.**—A serious catastrophe overtook the Japanese General Staff on 14th August, when a Japanese military aeroplane crashed on the Tachikawa aerodrome, a few miles outside Tokyo.

Two new bombing machines of the Dornier type, built under German licence in Japan, left the aerodrome to take part in air manoeuvres some eighty miles distant. The first, carrying the Chief of the Japanese General Staff and other officers, arrived safely at its destination. The other machine, after reaching a height of 600 feet, suddenly nose-dived to the ground a few hundred yards from the aerodrome. The occupants—six officers and one civilian—were all killed. They included Major-General Ogawa, of the Directorate of Military Operations, and Colonel Fujioka, of the Directorate of Staff Duties. The cause of the disaster has not been ascertained. The machines are designed to carry twenty persons, or two tons of bombs, and have a speed of 110 miles an hour.

Suitable expressions of sympathy have been conveyed from the British Army to the Japanese General Staff.

**ARMY ESTIMATES.**—With the new Government pledged to a policy of economy and retrenchment, the Army estimates for the current fiscal year have been overhauled and reduced by Y13,000,000 from the Y231,000,000 originally sanctioned by the Diet.

**MANCHURIAN GARRISON.**—From 1st December the number of independent railway guard battalions for the protection of the South Manchurian Railway is to be increased from four to six. This is nothing more than a return to the former strength, as there were six special battalions allotted to this duty until 1922, when two were abolished at the time of the first army reduction and re-organization scheme. The decision to return to the former strength is apparently due to continued requests from the local Japanese communities, who are always apprehensive of Chinese bandit raids.

**ARMY RE-ORGANIZATION.**—With a view to reducing expenditure without impairing efficiency, a special commission, under the chairmanship of Lieutenant-General Abe, Vice-Minister for War, has been appointed to study ways and means and to submit a report within six months giving their recommendations.

The commission started its deliberations on 16th August, when General Ugaki, who succeeded General Shirakawa as Minister for War in July, addressed its members regarding the main points to be kept in view. It was under General Ugaki's former administration that a drastic reduction and re-organization of the Army was effected in 1925. Much was expected of him therefore in the present attempt to cut down expenditure and to effect reforms, but unexpected opposition appears to have been met from the General Staff and the Department of Military Education, both of which are independent of the War Office. Expectations, therefore, are, less sanguine than at the outset, though it is believed that General Ugaki, who has the reputation of being far-sighted and a believer in bringing both weapons and training more up to date, will aim principally at abolishing superfluous establishments, making the system of training more flexible in order to allow for local conditions, reforming the present system of pre-conscriptive training, modernizing weapons and equipment, introducing a greater measure of mechanization, and increasing air efficiency. It seems doubtful if any further reduction in the number of divisions will be carried out, but a reduction of colour service may be recommended and other economies effected by changes in the present system of military administration generally. (*From a Tokyo correspondent.*)

## MOROCCO

**FRENCH REVERSE IN THE MIDDLE ATLAS.**—On the morning of 8th June, a French mixed force about 900 strong composed of the 7th Tirailleurs Marocains,

a contingent of the Foreign Legion and two sections of artillery, accompanied by a screen of irregulars (the 38th Goum) were attacked in the neighbourhood of Ait Yacoub, near El Bordj in the Taflelt Oasis of the Middle Atlas, by some 2,000 men of the tribes of the Ait Haddidon and the Ait Yahia. A serious fight took place and the French force suffered heavy losses.

The post referred to is in the locality of the Ziz valley, on the road between Bou Denib and Erfoud, and is one of the French outposts lately created in that region with a view to facilitating the gradual pacification of the Taflelt Oasis, and affecting a further advance south-westwards with the object of clearing up the southern confines of the Atlas range.



It appears that telephonic communication had been cut between Ait Yacoub and El Bordj, and the commandant of the former post sent out the force mentioned above to repair them; this fell into a treacherously prepared ambush. The losses suffered by the French were heavy, and included 7 officers and 15 French non-commissioned officers, 4 native non-commissioned officers, 24 French soldiers and 39 natives killed; and 12 wounded including 2 French officers and 2 French non-commissioned officers. General Freydenberg, commanding the region, and General Vidalon, commander-in-chief the troops of Morocco, at once proceeded to Rich and reinforcements consisting of two battalions of the Foreign Legion, a squadron of Spahis and two batteries of artillery were rushed to this area, while the air service was concentrated in this sector, where its action was very effective. It was not till 20th June that these reinforcements, aided by the air service, succeeded in finally driving off the hostile tribesmen who had invested the post of

Ait Yacoub on three sides since 9th June—and relieving its remaining garrison of 360. This reverse, unfortunate though it undoubtedly is, is unlikely to have serious repercussions elsewhere, but it brings into relief the dangers that attend French penetration into the dissident mountainous areas.

**SUBMISSION OF AIT MRIBET TRIBES.**—About the middle of July, the Ait Mribet tribes who live in the Anti-Atlas came in and submitted to the French at Tiznit and at Igherm (a post about 100 kilometres south-east of Taroudant). This submission is of some importance as the tribes concerned consist of about 15,000 persons, and the boundary of the submitted area now extends some 200 kilometres South of Taroudant.

**NEW "DEFENSIVE" MEASURES IN THE MIDDLE ATLAS.**—The position of Tizouine in the Arbala-Tadla region has been occupied by irregulars and subsequently put into a state of defence by regulars. A series of small operations are foreshadowed in the region of the Oued-el-Abid. The organization of the El Bordj—Ait Yacoub area is also being strengthened. Legion, Moroccan and Senegalese *Tirailleurs* under Colonel de Loustal as well as partisans under Colonel Blanc are engaged in these operations.

During the past year great progress has been made in extending French influence and control in the Glaoui country beyond Telouet and in the Ouarzazat district.

Until recently, the *Bureau des Affaires Indigènes* at Telouet has been responsible for conducting the political work of peaceful penetration among the Trans-Atlas tribes owing allegiance to the Glaoui. The creation of a *Cercle* or "District-Governorate" headquarters at Ouarzazat, as provided for by the new administrative scheme detailed in the *Bulletin Officiel*, is an indication that most of the tribes have been successfully won over, and conditions are in that district favourable for the institution of a greatly increased measure of French control in local affairs there.

Dependent upon the *Cercle* headquarters will be *Bureaux des Affaires Indigènes* at Telouet (already established), and at Kelaa Mgouna. The latter is a newly created post situated on the confines of the territory now falling within the orbit of French influence, and close to the unsubdued Dades and Todra oases.

The decision to create these new posts was arrived at several weeks ago. The actual establishment, or opening up, of the posts was carried out at the end of last month, and has proved somewhat of a counterblast after the recent reverse or surprise at Ait Yacoub. There has been a certain amount of effervescence during the past few weeks between the "subdued" tribes and the rebel tribes living in the mountainous country between Demnat and the newly created post at Kelaa Mgouna. There has also been trouble among the tribes between Kelaa Mgouna and Ouarzazat, where Ait Atta rebel bands have attacked Ouarzazat caravans, killing a few tribesmen and carrying off various animals and stores as plunder.

It is not thought, however, that these local troubles should be considered as an indication that the establishment of the posts at Kelaa Mgouna and Ouarzazat is viewed with disfavour by the inhabitants of the districts in question. These local raids have been carried out by men from the tribes which took part in the Ait Yacoub attack (or their rebel allies), and are designed to try and shake the confidence of the surrendered tribes in their French protectors. It is obvious that the dissident tribes such as the Ait Shokman, Ait Atta and Ait Morghad must be viewing with apprehension the advancing wave of French influence towards their shrinking domains.

## SPAIN

**CREATION OF SCHOOL OF HIGHER MILITARY STUDIES.**—It has been decided to convert the "Higher War School" into a "School of Higher Military Studies." The former is to be closed down in February, 1930, and on the following 1st June the "School of Higher Military Studies" will be formed. The staff will be appointed by 1st March, the commandant being a general and the chief instructor a colonel.

The school will be organized into two sections:—

- (1) Military.
- (2) Industrial.

The first section (Military) will prepare officers for the staff.

The second section (Industrial) will be divided into three sub-sections:—

- (1) *Chemico-Metallurgical Section*, for the instruction of specialists in manufacture of armaments, powders, explosives and gases.
- (2) *Military-Architectural Section*, for instruction of personnel in military works and buildings.
- (3) *Electro-Technical Section*, for mechanical, electrical and motor instruction.

To qualify for entrance to the School of Higher Military Studies, officers must have completed their two years at the General Academy and subsequent three years at the academy of their own arm; they should also have been two years in command of a unit (company, squadron or battery).

The entrance examination will be competitive.

The period of studies in the first or Military Section will extend over forty-three months. There will be no end-of-course examinations, but officers will be qualified for the staff on their general work and will be given a diploma of special qualification, which carries with it a special extra grant of 20 per cent. on their pay up to the rank of general.

The proportion in which the different arms will be represented in this section of the school will be as follows:—

Of twenty-five vacancies:—

12 will be allotted to infantry officers.

2 " " cavalry "

4 " " artillery "

2 " " engineer "

5 " " indiscriminately to any arm or corps at the discretion of the authorities.

In the second or Industrial Section there will be two separate courses for each of the three technical subjects, and officers passing in these will be given the degree of Engineer in the particular class in which they have qualified.

# AIR NOTES

## ROYAL AIR FORCE

### APPOINTMENTS

Rank and Name.	To	Date	Remarks.
Air Vice-Marshal H. C. T. Dowding, C.B., C.M.G.	Headquarters, Transjordan and Palestine.	7.9.29	On appointment as Air Officer Commanding. (Temporarily).
Air Commodore W. G. S. Mitchell, C.B.E., D.S.O., M.C., A.F.C.	Air Ministry (Dept. of A.M.P.) (D. of T.)	4.10.29	On appointment as Director of Training.
Air Commodore W. R. Freeman, D.S.O., M.C.	R.A.F. Training Base, Leuchars.	11.9.29	Supernumerary. Pending posting.

### PERSONNEL

FLYING TRAINING.—During the period 1st July to 30th September, 1929, the following completed courses of instruction at Flying Training Units:—

Course.	Officers.	Airmen.
"Ab initio"	51	29
Flying Instructors	19	8
Conversion	12	1
Refresher	5	1

Thirty officers of the Reserve of Air Force Officers and four Auxiliary Air Force officers duly qualified and were awarded the Pilot's Flying Badge.

R.A.F. COLLEGE, CRANWELL.—During the period under review, thirty-one R.A.F. cadets completed their training at the R.A.F. College and have been granted commissions. Four foreign cadets also completed the same training.

### NAVAL CO-OPERATION

The flights embarked in the aircraft carriers and in H.M.S. "Vindictive" have carried out their normal duties and exercises with the fleet.

(See also the FLEET AIR ARM, page 862).

### ARMY CO-OPERATION (HOME)

The allotment of squadrons to commands remains unchanged. All squadrons have been employed in Divisional and Command training during the period under review up to 19th September, when the last War Office Exercise with troops concluded the Training Season.

The major exercises took place on Salisbury Plain between 2nd and 19th September. Nos. 4 and 16 (Army Co-operation) Squadrons took part and were joined during the last four days of the period by No. 13 (Army Co-operation) and No. 41 (Fighter) Squadrons. The weather was good throughout the whole season and enabled the utmost use to be made of opportunities for co-operation.

During the same period No. 2 (Army Co-operation) Squadron took part in exercises at Colchester and in the East Kent area and No. 26 (Army Co-operation) Squadron at Catterick.

A test mobilization of Nos. 13 (Army Co operation) and 41 (Fighter) Squadrons was held in September. This is the first time that the latest M.T. Squadron equipment has been available. As a result of this exercise much valuable experience has been gained.

During July over 500 members of the Junior Division of the Officers' Training Corps were given flights at the Tidworth Camp.

The Army Co-operation Report for 1929 will be issued early in 1930 and will embody details of this year's training.

#### ORGANIZATION

The following moves of units took place between the dates stated:—

No. 33 (Bomber) Squadron, Netheravon to Eastchurch, 9th-14th September.

No. 13 (Army Co-operation) Squadron, Andover to Netheravon, 23rd-28th September.

No. 101 (Bomber) Squadron, Bircham Newton to Andover, 7th-12th October.

No. 207 (Bomber) Squadron, Eastchurch to Bircham Newton, 4th-9th November.

#### SCHNEIDER TROPHY CONTEST

The race for the Schneider Trophy took place at Calshot on 7th September, and was won for Great Britain by Flying Officer H. R. D. Waghorn on a Supermarine Rolls-Royce S.6 at an average speed for the whole course of 328.63 m.p.h.

This average speed over a closed circuit was 10 m.p.h. faster than the world's record of 318.6 m.p.h. over a straight line course set up by Major Bernardi in 1928.

#### WORLD'S SPEED RECORD

On 10th September, Squadron Leader A. H. Orlebar, A.F.C., also flying a Supermarine Rolls-Royce S.6, set up a new world's record for a straight line course by attaining an average speed over four runs of 355.8 m.p.h.

#### OVERSEAS COMMANDS

##### ADEN

During September, trouble was experienced with the Koteibi tribe, who inhabit an area North of Assauda on the main route from Dala to Aden. The tribesmen had for some time past been guilty of interfering with traffic and looting caravans on the road. As a warning, the stipends paid to the Koteibi Sheikhs were stopped, but as this proved to be of no avail they were warned that if the offences did not cease, air action would be taken against them. They accordingly promised to bring the tribesmen to reason. At the Sheikh's request aircraft of No. 8 (Bombing) Squadron assisted by carrying out demonstration flights over the area and dropping warnings on the tribesmen. Up to the present no further trouble has occurred.

##### IRAQ

During the period under review the situation generally has remained quiet and no offensive operations have been necessary.

**REDUCTION OF FORCES.**—A further reduction of forces was effected on 1st October, when No. 6 (Army Co-operation) Squadron was withdrawn from Iraq. The advance party which left Hinaidi on 2nd October in five Victoria

aircraft of No. 70 Squadron arrived at Moascar the following day, after spending the night at Amman. A mechanical transport convoy conveying the remainder of the personnel and stores left for Moascar on the 6th October. The squadron aircraft will be flown to their new station as soon as the necessary arrangements have been completed. The squadron which is being transferred to the Middle East Command has been replaced at Mosul by No. 30 (Bombing) Squadron from Hinaidi.

**NO. 203 FLYING BOAT SQUADRON.**—A flight from Basrah to Mosul and return was carried out during July, by one flying boat of No. 203 Squadron. The flying boat left Basrah on 9th July and, after stopping at Hinaidi, made a successful landing on the Tigris at Mosul on the following day. Various landing and taking off tests were carried out from which it was ascertained that the river at Mosul could be used for the operation of flying boats for the greater part of the year. The flying boat returned to Basrah on 13th July.

On 3rd August one flying boat of No. 203 Squadron left Basrah with Air Marshal Sir Geoffrey Salmond, A.O.C., India, as passenger on a flight to Karachi. The route followed was Bahrein, Umm al Qaiwain, Ras al Khaimah and along the coast of Oman to Muscat and thence to Gwadar. At the latter place, in spite of a bad swell on the water, the aircraft was refuelled without difficulty and the flight continued to Karachi, which was reached on 6th August. On the return journey opportunity was taken to inspect sites for landing grounds at Sohar and Yas Island. At both places suitable sites were found. The flight continued to Bahrein, having covered a distance of 400 miles since refuelling at Ras al Khaimah, and arrived back at Basrah on 16th August.

#### PALESTINE AND TRANSJORDAN

During the recent disturbances in Palestine, the Royal Air Force has been actively employed in assisting the Government in the task of restoring law and order in the numerous areas where rioting occurred, and in preventing the further outbreak of disorders. At the outset, the rapid movement of troops was of vital importance, and the transport by air of fifty infantrymen from Egypt on the day following the outbreak did much to assist the authorities in gaining control of the situation. During the period following the outbreak, aircraft were constantly engaged in carrying out demonstration flights and reconnaissances over the disturbed areas, and co-operating with the military forces in the searching of villages. The armoured car sections, by systematically patrolling the streets, assisted in the dispersal of mobs and the guarding of villages against attacks. During this phase ground detachments of the Royal Air Force were employed at many points throughout the disturbed areas in maintaining order and preventing the rioters from committing acts of violence. Throughout the period there was a constant danger of incursions into Palestine of Bedouin tribes from Sinai, Transjordan and Syria. In some cases the frontiers were actually crossed, but further progress was successfully checked by the action of the aircraft and armoured cars in co-operation with the Transjordan Frontier Force.

In addition to the reinforcements of naval and military contingents which were despatched to Palestine to deal with the situation, No. 45 Squadron and one flight of No. 208 Squadron, were sent from Egypt and No. 3 Section Armoured Car Wing from Iraq. The full complement (six flights) of aircraft of the Fleet Air Arm from H.M.S. "Courageous" was landed at Gaza. Air Vice-Marshal H. C. T. Dowding, C.B., C.M.G., assumed command of the forces in Palestine and Transjordan on the 12th September.

By the middle of September the situation had so much improved that it was found practicable to make certain reductions in the strength of the forces. The withdrawal from Palestine of all H.M. Ships together with the Fleet Air Arm flights and landing parties was accordingly effected by 14th September.

Since the original outbreak of disorder no serious disturbances have occurred and the situation is now quiet.

(See also GENERAL SERVICE NOTES, page 855).

### SINGAPORE

Two more flights along the Singapore-Calcutta route have been carried out by aircraft of No. 205 (Flying Boat) Squadron during the period under review. One flying boat left Singapore for Calcutta on 6th August and returned on 21st August, and a second left on 3rd September and returned on 18th September. On both flights halts were made at Penang, Margui, Rangoon, Akyab and Chittagong. A third flight to Calcutta is in progress.

The object of these monthly cruises is to gain practical experience of weather conditions from an aviation point of view during the whole of the monsoon period. Their value from this aspect has been well demonstrated as the conditions experienced during the first cruise to Calcutta in August were quite different from those met with on a flight to Rangoon in June. The worst conditions so far experienced occurred during the return of the flying boat from Calcutta in August, during which the monsoon rain was particularly heavy. The difficulties of flying through this tropical rain are somewhat similar to those of flying in fog with the added disadvantages of a strong wind, bumpy air conditions and the acute discomfort of the rain beating into the pilot's face. In spite of these conditions, however, the aircraft have adhered to the time tables of the flights with only minor alterations.

### SUDAN

Further trials of aircraft fitted with float under-carriages were carried out in the swamp areas of the Sudan during August. The aircraft, proceeding from Khartoum, visited Malakal, Shambe, Yirrol, Mongalla, Wau, Lake No, Nasser and Abwong, successful landings being made at each of these places. A certain amount of difficulty was experienced in taking off which it is hoped to overcome by the use of improved propellers and floats. As a result of these trials it is considered that the use of float planes is possible in most places in the Southern Sudan during the rainy season, which will enable aircraft to operate in the swamp areas which have hitherto been inaccessible to any form of military force.

## AVIATION IN FOREIGN COUNTRIES

### CZECHO-SLOVAKIA

The Avia Company which is owned by the Skoda firm, the most important of the Czech aircraft firms making aeroplanes of wood construction, has acquired the licence to build two types of Fokker transport aircraft, the F.VII and the F.VII-3m. This firm has had great success with their BH.II, a two-seater monoplane fitted with a 60-h.p. Walter engine, which is used either as a training machine or for touring purposes. Licences to construct this type have been acquired by Belgium and Switzerland, while negotiations are proceeding for the licence to be sold to

U.S.A. also. The B.H.33 is another type which is regarded as one of the firm's best efforts and has been demonstrated before representatives of Rumania, Yugoslavia, Turkey, France and Russia, the latter having placed a trial order. This is a single seater fighter biplane with either a Jupiter 480 h.p. or Jupiter 380 h.p. supercharged engine; it is stated to give an exceptionally good performance.

### FRANCE

**THE AIR MINISTRY.**—The French Air Ministry is still engaged in solving the problem of taking over control of national and civil aviation. On the technical side steady progress has been made, and an organization has been developed to meet both civil and military needs. The study of safety in the air has received special attention, and a special Committee representing all branches of aviation has been set up to examine this question.

The amalgamation of civil aviation firms and aircraft construction companies has been encouraged with a view to greater economy and efficiency. Colonial aviation has received attention and plans for development are being pushed along.

The Army and Navy authorities continue to thrash out with the Air Ministry questions of command and employment of the national air forces. Although progress has been made there is still some confusion, and many important matters remain to be decided. On the whole the Air Minister has consolidated his position in civil aviation and in technical matters, both civil and military, but the Navy and Army retain operational control of the air forces working with those Services.

### GERMANY

**THE AVIATION BUDGET, 1929-30.**—The following sums have been voted for German Civil Aviation for the financial year 1929-30. The corresponding figures for 1928-29 are also shown for purposes of comparison:—

	1929-30 R.M.	1928-29 R.M.
1. Air traffic W/T Stations	1,629,750	1,067,895
2. Exhibition and Competitions: prizes and cost of preparation	200,000	2,000,000
3. Meteorological services	1,195,000	1,800,000
4. Promotion of general efficiency and technical development of air transport	*6,180,000	18,800,000
5. Maintenance of Adlershof Experimental Station	1,600,000	1,500,000
6. Promotion of air transport	*10,550,000	20,165,000
7. Development of air stations	100,000	1,050,000
8. Equipment of new wireless stations	273,000	450,000
9. Illumination of night routes, maps and charts for navigation	350,000	200,000
10. Training of professional pilots, promotion of sailing flight, light aeroplanes, ballooning, aviation displays, etc.	2,610,000	4,650,000
11. Contributions to Göttingen Experimental Establishment and other Research Institutes	770,000	150,000
12. Contribution to maintenance of a permanent exhibition of aircraft and equipment.	6,500	1,500
13. Airship development	2,500,000	700,000
	<hr/> 27,964,250	<hr/> 52,534,295

\* Plus the loans mentioned on next page.

The drastic reductions in the current budget are due largely to adverse criticism of the heavy subsidies awarded to civil aviation in the past and the maintenance of unnecessary and uneconomic internal air lines.

As a result, however, of vigorous protests against the Government's action a compromise has been effected whereby the Reich is to supplement Items 4 and 6 by the following loans:—

*Under Item 4.*—A loan of 9 million marks to the Aircraft Industry.

*Under Item 6.*—Two loans amounting in all to 12 million marks to the Deutsche Lufthansa A.G.

Thus, in all, very little less money will be forthcoming from the State during the current year for civil aviation. In addition there are, of course, the sums allotted by the various States, Provinces, Municipalities, etc.

### ITALY

Italy continues to improve her aircraft trade relations abroad. As previously reported, in January of this year an amalgamation of the firms of Caproni of Italy and the Curtiss Aeroplane Company of U.S.A. took place entailing certain exchanges of manufacturing rights and co-operation in design between the two firms. We now hear of the formation of an American Aeronautical Corporation with works near New York for the manufacture of the Savoia type of commercial aircraft, the S.55, in America. Signor Marchetti, the designer of the S.I.A.I. (Savoia) firm in Italy is one of the directors of the new company, which has acquired the sole rights for North America and Cuba for the construction of this successful type of aircraft. The S.55 is a twin hulled monoplane flying boat having two 500 h.p. Isotta Fraschini "Asso" engines and is used extensively both on Italian air lines and in the Italian Air Force.

In addition, recent purchases of Italian aircraft have been made by the Governments of Lithuania, Portugal, Rumania and the Argentine.

**NEW AIR-PORT FOR MILAN.**—Work is proceeding on the construction of a new airport for the city of Milan. At Linate del Lambrate, about four and a half miles from the centre of Milan, an artificial lake, 8,200 feet long, 650 feet wide and 25 feet deep is being built, which will form the seaplane base, whilst at Taliedo, two miles distant, the aerodrome section of the airport is being laid out. A specially constructed road will connect the two. It is estimated that this work will cost 10,000,000 lire (approximately £107,820).

### UNITED STATES

The number of airports in the United States listed in the records of the Department of Commerce on 31st July was as follows:—

Municipal airports	..	..	..	..	..	..	..	428
Commercial airports	..	..	..	..	..	..	..	439
Intermediate airports	..	..	..	..	..	..	..	263
Army Air Corps stations	..	..	..	..	..	..	..	70
Navy and Marine Corps stations	..	..	..	..	..	..	..	14
Marked auxiliary fields	..	..	..	..	..	..	..	269
Other Government airports	..	..	..	..	..	..	..	2
Total	..	..	..	..	..	..	..	1,485

In addition, there were 1,174 airports proposed.



## AIRSHIP NOTES

### GREAT BRITAIN

#### NEW AIRSHIPS

"R.101" was taken out of her shed for the first time and moored to the tower at the Royal Airship Works, Cardington, on 12th October, and is now undergoing flying trials.

"R.100" is completing air-borne machinery tests in the shed at Howden, East Yorkshire, and it is hoped that flying trials will begin during November.

### GERMANY

THE WORLD FLIGHT OF THE GRAF ZEPPELIN.—Full details of this, the first lighter-than-air voyage round the world, have already appeared in the Daily Press. The following is a short day-to-day summary of the flight :—

August	1st.	Preliminary flight to America begun.
"	4th.	Arrived at Lakehurst. Time taken 95 hours.
"	8th.	Left Lakehurst on world flight.
"	10th.	Arrived at Friedrichshafen. Time taken 55½ hours.
"	15th.	Left Friedrichshafen for Tokyo.
"	19th.	Arrived at Tokyo. Time taken 100 hours.
"	23rd.	Left Tokyo for Los Angeles.
"	26th.	Arrived at Los Angeles. Time taken 79 hours.
"	27th.	Left Los Angeles for Lakehurst.
"	29th.	Arrived at Lakehurst. Time taken 56 hours.

The total time taken for the flight (some 21,000 miles) was 21 days, 7 hours, 34 minutes, the actual flying time being 11 days, 23 hours, 33 minutes (i.e., 287 hours, 53 minutes).

The airship left Lakehurst for Germany on 1st September and landed at Friedrichshafen on 4th September, after a flight of 68 hours' duration.

### JAPAN

NEW NAVAL AIRSHIP.—A new airship is under construction for the Japanese Navy. According to Press reports, the airship is to be of the semi-rigid type with two 130 h.p. Maibach engines, the volume of the balloon will be 7,500 metres, length 81 metres and endurance 30 hours. It is expected to be completed shortly.

### SPAIN

In the course of a lecture at Oviedo on his voyage in the "Graf Zeppelin," Colonel Herrera of the Spanish Air Service, expressed his opinion that the air service between Seville and Buenos Aires would be in operation within a year and that the service would be probably opened by the "Graf Zeppelin." Officers of the "Graf Zeppelin," interviewed at Friedrichshafen by a Press correspondent, stated that there were still certain difficulties in the way before a regular service

could be inaugurated. In the first place suitable airship sheds would have to be constructed both in Seville and Buenos Aires, as well as a mooring mast and refuelling stations on Brazilian territory.

It was stated, moreover, that even if all these preparations were concluded it would be very unlikely that the "Graf Zeppelin" would operate the Spain-South America line regularly, although it might make a propaganda flight to the Argentine to inaugurate the new service.

### UNITED STATES

**ALL-METAL NAVAL AIRSHIP—Z.M.C.2.**—This airship, which has caused much controversy as to whether it would ever fly, has been successfully tried out, although a total of 30 hours' flying time is necessary before acceptance, by the Navy Department. Apart from the two trial flights the airship was flown from Detroit to Cleveland and back on 25th August, a distance of approximately 370 miles at a cruising speed of 59 m.p.h.

The Z.M.C.2 is 149 feet 5 inches long and 52 feet 8 inches in maximum diameter, giving it a fineness ratio of 2.83. It will hold 202,200 cubic feet of helium gas and has accommodation for a crew of four. The engines installed are two Wright 220 h.p. engines giving the airship a maximum speed of more than 60 m.p.h. The cruising range is estimated to be approximately 600 miles.

Three distinctly radical departures from conventional lighter-than-air craft construction are contained in the structure. It is all metal, except for the two balloonets within the hull by means of which the pressure of gas is controlled. The skin is constructed of Alclad with a gauge of .0095 inch. It is fitted with an entirely new control method, having eight fins round its tail using four of them as rudders and elevators. These fins are set thirty feet forward of the tail in order to increase stability. Finally, it has an unusually low ratio of fineness for an airship of its size.

The airship was not designed as a craft with commercial possibilities but was constructed purely as an experiment and is said to have a considerable number of military, naval and scientific uses. It is claimed by the builders that the gauge and strength of the Alclad metal used in the construction are such that an airship seven times the size, but of the same type, can be produced without increasing the width or weight of the metal per square inch.

The Aircraft Development Corporation constructed the airship and it is said that the total cost is approximately £230,000. The cost of the airship to the Navy Department is but £60,000.

**AIRSHIPS AS AEROPLANE CARRIERS.**—On 23rd July, three tests were made by a U.S. Navy pilot in hooking on and releasing a reconnaissance aeroplane to the airship "Los Angeles" while in flight; all were successful. It is said that these experiments were conducted with a view to obtaining data in preparation for manœuvres of a similar nature with the two new airships of 65 million cubic feet, which are to be constructed for the U.S. Navy. It is understood that accommodation for carrying heavier-than-air craft has been made in the plans of these new rigid.

During the last week of August, further demonstrations took place and a passenger in the airship was transferred to the airplane which, on being released, returned to its base.

Similar experiments were carried out in England in October and December, 1925.

## REVIEWS OF BOOKS

## GENERAL

**British Strategy: A Study of the Application of the Principles of War.**

By Major-General Sir F. Maurice, K.C.M.G., C.B., LL.D. With an Introduction by Field-Marshal Sir G. Milne, G.C.B. (Constable & Co., Ltd.). 10s.

This volume is based on a series of ten lectures delivered by the author before the University of London and also before the Staff College. The lectures are now re-issued and further brought into line with the doctrines of war as expounded in the latest edition of our Field Service Regulations. There are four initial chapters dealing with the nature of war and the broader aspects of strategy. Seven chapters follow, each dealing with one of the accepted "principles of war."

Field-Marshal Sir George Milne, in his Introduction, emphasises the importance of a clear understanding of the special characteristics of the British Empire, of its "construction and methods of government . . . and of the financial and economic conditions under which it exists." For years past he says "British soldiers have been nourished on the ideas of continental strategists, generally expressed in terms untuned to British ears and dealing with situations likely to affect continental Powers more than the British Empire." These words of the Chief of the Imperial General Staff may well serve as a guide to every British student of war.

It is questionable, however, whether the present work quite fulfils this purpose or deserves its title. To begin with, the Principles of War, which take up the greater part of the book, are of universal application, although the author shows that there are undoubtedly essentially British aspects of their application, that is to say, forms of warfare, such as amphibious operations, to which our national characteristics, the composition and organization of our fighting Services and the geographical distribution of the Empire, particularly lend themselves.

Turning to the chapter on Strategy, we find no clear-cut distinction between Grand Strategy and Military Strategy, in the broad sense of the word "military." It is in Grand Strategy particularly that we look for those essentially British characteristics which should govern the methods whereby policy is translated into warlike action. It is true that the author alludes to the influence of sea power, and to the advent of air power; also to the "need for thinking of strategy as concerning something more than the movement of armies on land"; yet he gives us no definite conception of Grand Strategy, nor does he expound how it should apply to British warfare.

The principles of military strategy, i.e., those governing the disposition and movement of troops, ships or aircraft, before making contact with the enemy, admit of less and less purely British, but more and more of general, application, as we near the point where strategy ends and tactics begin. In minor strategy, especially on land, the application of those principles is by no means peculiar to ourselves, and they have already been dealt with by foreign writers in no very different fashion from that to be found in the later chapters of the book.

As an elaboration and illustration of the sound doctrines contained in Field Service Regulations, a work of this sort by General Maurice will naturally command interest and respect, but "British Strategy" is a subject common to all three Services, and one, therefore, which requires to be dealt with on very broad lines.

Certain statements in the book are open to more detailed criticism. Such are the facts given on pages 97 and 111, concerning the German intervention on the Italian front in the autumn of 1917. Actually six German Divisions were sent to Caporetto. Four British and four French Divisions were despatched to restore the situation, which they did. They thus served their purpose. And is it not hazardous to assume that these four Divisions might have altered the fortunes at Cambrai? Two more British Divisions ordered to Italy were perhaps retained as a result of the Cambrai fighting, but it would need a close study of the entire situation of that battle to say that the four Divisions actually despatched to Italy could have been thrown into the Cambrai struggle with hopes of converting it into a victory. Neither can we endorse General Maurice's views about Plan XVII being the only possible plan of mobilization open to the French High Command in 1914. Again, we do not quite grasp the arguments he presents concerning the need for the "offensive"; the story of the French attacks in 1914 as given on page 119, and again on page 157, is not altogether easy to follow. There is surely such a thing as selecting a point for attack, and yet another for defence. Is not the quotation made from Mr. Churchill on the latter page a proof that the French theory of headlong attack was faulty? Lastly, on page 101, General Maurice makes a serious slip in his unfortunate use of Mr. Churchill's book concerning the length of time necessary to transport the German forces from the Eastern to the Western front. From German official reports there is no doubt that parts of four corps could be shifted simultaneously from one front to the other on one day, while the total duration of moving those four corps (with a fifth at a pinch) proved to be less than nine days. General Maurice would lead us to believe that this operation needed "two or three months at the very least (!)"

An index would have been a great asset to a work of this character.

However good it may be, the book needs revision before it can be accepted as a really first class text book on strategy.

**The Life of Lord Fisher of Kilverstone.** By Admiral Sir R. H. Bacon, K.C.B., K.C.V.O., D.S.O. 2 Vols. (Hodder & Stoughton, London). 42s.

Certain curious coincidences mark the milestones of Fisher's life. His first ship was Nelson's "Victory," which he joined in 1854; fifty years later he hauled down his flag for the last time from the same ship, and next day, Trafalgar Day, he became First Sea Lord and principal Naval A.D.C. to the King. On 30th October, 1874, he was promoted to Captain; on the same day of the same month, forty years later, he was recalled to the Admiralty as First Sea Lord for the second time.

Fisher, the eager, introspective boy, developed into that tornado of energy and enthusiasm, that self-confident egotist, that brilliant administrator, inventor and organizer, the Navy knew best and admired most; the Admiral whom his friends loved whole-heartedly, his followers served with fervour, and his enemies hated and feared. Then we see, in his declining years, self-confidence tending to become arrogance, energy intolerance, virile personality the petulance of an old age no longer able to dominate by sheer mental capacity and physical endurance.

Such, in brief, was Fisher the man. What of his services to the country and the Navy? The greater part of Admiral Bacon's biography is a paean—veritably "a war song after battle." Few will disagree with the author in paying tribute in full measure to his hero's early successes which won for him promotion to post rank at the age of thirty-three, or the conspicuous ability which he showed in the operations of Alexandria, as Captain of the "Excellent," Director of Naval Ordnance, Third Sea Lord and Controller, as C.-in-C. of the Mediterranean Fleet, Second Sea Lord, C.-in-C., Portsmouth, and, finally, as the professional head of the Navy—a First Sea Lord whom history must rank very high amongst all who have filled that great office.

To Fisher's genius we owe the introduction of water-tube boilers, oil fuel, the development of the Naval Air Service, and the most complete naval victory in the Great War—the Battle of the Falkland Islands. For these and very many other achievements, the Service owes him the deepest debt of gratitude due to any Flag Officer of his time.

Others of his great projects were, perhaps, more debatable. Admiral Bacon strongly defends the Osborne Scheme in its entirety; many will disagree with him in greater or less degree. Time has shown the necessity for modifications, but Fisher was incontestably right in introducing mechanical training into the naval officer's curriculum. Cadets were being sent to sea in steam ships full of electric and hydraulic machinery, while their initial training in technical matters had been largely taken up with "standing and running rigging" and "making plain sail." Gunnery Lieutenants were given charge of thousands of pounds worth of turret-machinery, without any previous engineering training. The system which he displaced was archaic.

The author makes a very clear and logical case for the "Dreadnought" policy, which he might have strengthened considerably if he had dwelt on the defects of the "King Edward VII" class, which apparently the opponents to that policy would have continued to build. Increased gun range had become imperative with the improved ranges of the torpedo, but the former not only called for a heavier main armament, it necessitated a *uniform* main armament, if control of fire, and therefore, effective hitting, was to be possible at these increased ranges. The "King Edward's" with their mixed armament of 12 inch, 9.2 and 6 inch guns, were the product of an age when the Navy, as a whole, was still very ignorant of really long range gunnery; Fisher, as usual, was in the van of reformers. A uniform armament of the heaviest guns must have an overwhelming advantage in the day of battle; it would seem almost as though the "Dreadnought's" critics were afraid of hitting the enemy too hard.

Fisher had many personal enemies and a multitude of friends and admirers; of the former, a large percentage were "small fry"; die-hards, disgruntled contemporaries, or honest disbelievers in radical reform in a traditionally conservative Service. With the "small fry" he had a somewhat ruthless way; but two really formidable opponents challenged his path in Lord Charles Beresford, and, in the bitter end, his close friend, admirer and political chief, Mr. Winston Churchill.

Of both these duels one can only say "Oh, the pity of it." Beresford, the hot-headed ambitious Irishman, spurred on by his entourage, worked himself into a state of personal grievance. This feud was fanned by partisan sections of the Press until it bid fair to divide the Navy into two opposite camps. Fisher had his way, but a First Sea Lord whose regime produced such controversies could not continue and make for the good of the Service. Tranquillity was only restored when he was succeeded by a neutral personality in Sir A. K. Wilson.

When he returned to the Admiralty in the War, the old disputes had died down, the Country and the Service looked to their old Naval Chief with confidence. The firm hand of a great professional expert seemed to grip the helm, and under its guidance came immediate success where there had been fumbling and failure. But, all too soon, professional and politician were to split on the rock of Gallipoli.

There were faults on both sides: Fisher absorbed in his visionary project in the Baltic, silent and glum where he should have denounced the Dardanelles scheme, or else thrown the whole weight of his experience to ensure that it was conducted on sound lines; Churchill obsessed with the idea of "forcing the Straits," ignorant of the limitations of naval gunnery against shore objectives; ignoring the whole system of a staff which he had prided himself on creating; impetuous, loquacious, yet sound enough in his conception of grand strategy; the brave statesman, but the surreptitious politician—explosion between two such personalities was inevitable.

The manner of Fisher's going has been much distorted, but even as retailed by his biographer, it did credit, neither to his, hitherto, high sense of duty, much less to his shrewdness. Had he been ten years younger he would have won another personal triumph; as it was, like Samson, he gave a final convulsive heave and in his own fall brought down the whole temple of the Government; possibly it was, unintentionally, his supreme service to the Country.

Admiral Bacon's biography cannot fail to awaken many old memories, give a flicker of life to many old controversies, yet it is doubtful whether it does justice, in the full sense of the word, to the truly great personality whose life he records. There are too many private letters, some of no particular importance or interest, and some which the writer had marked to be burned and which, therefore, it is in questionable taste to publish. This mass of correspondence tends to give the impression of excessive egotism and introspection. That Fisher suffered from such defects nobody will deny, but that, in his prime, he had other qualities which far outweighed them, even his enemies must admit. We should have liked more incident, more of his doings and less of his writings.

A painstaking work, a scholarly production, well indexed, yet biased and lacking the humanity, the infectious spirit of leadership, the appreciation of his subordinates, and the riotous enthusiasm, whether in work or play, of the real "Jacky."

**The Cambridge History of the British Empire. Vol. I.** (Cambridge: At the University Press). 35s.

This is the first of eight volumes projected by the Cambridge University Press to cover the whole history of the British Empire. The undertaking is indeed colossal, but it is one of a kind that Cambridge has led us to expect from time to time. The General Editors are Professors Holland Rose and Newton, of Cambridge and London respectively, and Mr. Benians, of St. John's College; and the first volume covers the inception and growth of what has become known as the Old Empire, and the mistakes that led to its collapse in the secession of the American Colonies. The work of no less than sixteen contributors appears in the volume—all, needless to say, scholars of high repute—and it is at once evident that the task of arrangement falling on the shoulders of the editors must have been most exacting. On the whole they have kept their team well in order, though some of the faults generally inseparable from this sort of work are not entirely absent.

After Oxford, in the person of Sir Charles Lucas, has taken the formal "kick-off," it is left to Mr. Williamson and Professor Newton to carry the game into its stride. The former deals lucidly with the opening of the Atlantic, and incidentally shows that effective occupation of land in the sixteenth century was a better claim to possession than has hitherto been recognised. Professor Newton writes on the early attempts at colonization, and later contributes a highly important chapter entitled "The Great Emigration, 1618-48," in which he deals most ably with the economic causes underlying these movements, and shows the haphazard nature of the first real growth of Empire under the early Stuarts. Professor Newton further adds unity to the whole story of the old Empire by a skilful analysis of the aims and outlook of the early settlers and of the attitude of the English Government towards them, in all of which the elements of the ultimate American problem can be clearly discerned. In the meantime, two chapters by Professor Holland Rose, in the former of which he joins forces with Mr. Salter, of Magdalene, have filled in the background of maritime activity and supremacy under Elizabeth that made these things possible; Professor Rose pleasantly accentuates the romantic aspects of Elizabethan sea power and conveys that expansive spirit of adventure that characterized the early Empire-builders. After the first of two illuminating chapters on International Law, by Professor Higgins, Mr. Williamson returns to discuss the beginnings of an Imperial policy during the Interregnum—in which chapter he ably defends the Navigation Act of 1651—and to trace the fortunes of the Colonies between 1660 and 1713. The rise of the French Navy and the consequent rivalry with England is in the hands of Mr. Reddaway, and this, with an erudite chapter on "The Acts of Trade" by Professor Andrews, of Yale, brings us finally to the Peace of Utrecht—an important landmark in the history of the Empire.

Up to this point so excellent has been the arrangement and so little, in the circumstances, the overlapping, that an admirably clear impression has been conveyed in spite of the number of hands at work. Before leaving the seventeenth century, however, it might be permissible to point out to all those writers who have had occasion to mention him, that the name of Blake's great adversary was Tromp, and not Van Tromp.

From the Peace of Utrecht to the Peace of Paris the story is told by as many pens, but with less success so far as the general impression is concerned. The individual chapters are all on a high level, but the contributors, though each writes, of course, on a different aspect of the period, nevertheless cover the same ground again and again, so that the effect is one of constant, and even at times wearisome, repetition. Mr. Reddaway writes of colonial rivalry between 1714 and 1748, and on the Seven Years' War; Mr. Headlam, of the development of the Colonies; Miss Penson of the West Indies and Spanish-American trade; Miss Martin of West Africa; and Mr. Temperley of the Peace of Paris. Some overlapping is inevitable and matters are further complicated by the fact that Professor Rose, writing on "Sea Power and Expansion," and Professor Andrews, on "The Government of the Empire," suddenly carry us back to the Restoration. Furthermore, Professor Rose deals with the naval side of various wars, and Mr. Reddaway, to some extent, with the military, with the inevitable result that each is compelled to mind the other's business. Thus a somewhat blurred impression of the first half of the eighteenth century is conveyed, and the reader is perhaps entitled to feel slightly harassed when he reaches the Peace of Paris. At the same time, it cannot be too often emphasized that the individual chapters are without exception, valuable.

The final stage is prefaced by chapters on "Mercantilism and the Colonies," by Professor Rees, and "The Constitution of the Empire," by Professor Ewing; and then we plunge straight into the series of perhaps inevitable blunders that led to disruption. From the standpoint of unity this is the most successful part of the volume for there is no overlapping at all. This is because the whole story, except that of the war itself, is told by one man, Mr. Headlam. Mr. Headlam's contributions are on the same high level as the rest—no better and no worse—but he is naturally able to let his left hand know what his right is doing and the result is a clear, comprehensive, account of the collapse of the old Empire. The period under review further gains from the fact that the naval and military sides of the war are in the hands of one contributor, Mr. Atkinson. The book ends with an interesting chapter on "The Literature and Social Life of the Old Empire" by the late Mr. Egerton.

This is a work of great importance, ably undertaken. Such faults as have been indicated are to a great extent inevitable and will be the less obvious when the book is used for reference, as no doubt it largely will be. This first volume has set a high standard for the remainder to attain.

**The Decisive Wars of History: A Study in Strategy.** By B. H. Liddell Hart. (London: G. Bell & Sons, Ltd.). 1929. 12s. 6d.

As Military Editor of the new Encyclopaedia Britannica, Captain Liddell Hart was presented with an opportunity, such as few critics have had, of acquiring a bird's eye survey of military history—with the advantage, moreover, of having each important campaign discussed by an historical expert. He has made good use of this gift of fortune, for the resultant volume in which he summarises his deductions is surely the most attractive he has yet given us. Clear and well argued, the whole book attains a high standard of merit. It is a pity, therefore, that it should be marred by certain defects that, to some extent, might prevent the book from carrying the weight that it deserves.

To name a few of these weaknesses. In the first instance the author conveys the impression that he finds it difficult to disguise a low estimation of the professional soldier; he makes it appear that he looks down on the conventional modes of thought and the one-sided outlook on war of the "normal" commander of to-day. Secondly, a liking for incisive language can degenerate into colloquialisms which impair the effect of the argument while spoiling a pleasing fluency and command of clear language. A book of this calibre should not contain phrases such as "the firm of Hindenburg-Ludendorff-Hoffman"; "Hindenburg-Ludendorff & Co." This smacks too much of the Lower Fourth. A plethora of inverted commas loses force by weight of numbers.

There is no need to say more; let us thank Captain Liddell Hart for the excellence of his wares, and let us look forward to a revised and matured edition of a really good book.

The pith of the argument is this. History proves that the *indirect* approach to an enemy has always yielded the best results, whereas a *direct* approach has tended to costly victories, if not to a peace of exhaustion. To some extent this is an explanation of familiar doctrine, for the author makes this "indirect" approach include anything from artifice or stratagem in the conduct of battle right up to the most far reaching plan of national war policy, taken as a whole.

It is in this last named direction that the true value of the work stands out. The author shows clearly how "indirectness" permeated certain war plans in all

those aspects which he differentiates as "war policy," "grand strategy" and "strategy." He proves that "indirectness" in the two former aspects have been practised in the past just as successfully as in the pure strategy of land warfare. The need for such further study of these problems with regard to the future is obvious. The application of naval, land and air forces will more and more need to be co-ordinated with economic, industrial and psychological methods of warfare; the whole should be based on a national strategy resting on the broadest basis and, according to our author, this must seek to be "indirect."

Where we believe Captain Liddell Hart begins to fail is in his chapter dealing with "Construction." Here he starts with the assumption that war is a science, and he then begins drawing hard and fast deductions. But within the meaning of the term as used in this book war is not a science but an art; consequently it is not subject to generalizations. Further, as Captain Liddell Hart says of Hannibal, the great captain is *abnormal* and adopts the methods which he imagines lead to victory. But the learner and the student cannot be "abnormal," and so require rules or principles for guidance. Of course they are not great captains. That is the reason why great artists succeed, and (if we may parody Captain Liddell Hart in a friendly way) Holbein "gets there" and Beethoven "puts it across us." The further question arises whether the world could, under the conditions prevalent in the War 1914-1918, ever have produced a great captain; after reading the most readable chapters which analyse the strategy of the Great War, we begin to doubt it. Democratic conduct of war does not encourage the breed. Still, that is a subject which lures one on. We begin to desire a closer insight into this, the greatest problem of future war. Will Captain Liddell Hart perhaps give us another volume on this most fascinating topic?

**Voyages to the East Indies.** By Christopher Fryke & Christopher Schweitzer.

Introduction and Notes by C. E. Fayle. (Cassell & Co., Ltd.). 10s. 6d.

These accounts of travels in the East Indies were written by two employees of the Dutch East India Company, who give a vivid picture of trade, politics and war in the overseas Empire of the Netherlands in the xviith century. The authors seem to have been observant men who took an intelligent interest in all the new and strange things which they saw, and as their accounts cover practically the whole field of Dutch activities in the East at the time when the Dutch East India Company was at the height of its prosperity, these narratives are of considerable historical interest, as well as being very readable and amusing.

**Malta. Institution of Royal Engineers. Series of Descriptive Accounts of Foreign Stations.** 1s.

This pamphlet is full of useful information for those who are making either a short or prolonged stay in Malta, although published ostensibly for the use of R.E. Officers ordered to that station. It is one of a series, in which it is intended to include Bermuda, Ceylon, Egypt, Gibraltar, Hong Kong, Malta, Mauritius, Singapore and Sierra Leone; also a similar publication entitled "Notes for Officers proceeding to India," the price of which is 2s.

## NAVAL

**The Narrative of a Naval Nobody.** By Lieutenant-Commander Douglas Fairbairn, R.N. (John Murray). 10s. 6d. net.

There have been many books of war reminiscences, but there is plenty of room for another like that of the "Naval Nobody," in which the author tells in simple language and with sincerity what he saw and felt, as a young officer, during the eventful period which included the Great War. There are touches of humour, vivid descriptions of events in action, of the sinking of ships and the simply told story of the life of the average naval officer during his training period and afterwards at sea, in peace and war. All this goes to make a very readable book. The author starts his career at Osborne, and describes life there and at Dartmouth, followed by a cruise in the West Indies. Then, whilst in H.M.S. "Monarch," he sees the old "Empress of India" sunk by the guns of the Home Fleet. The outbreak of war finds him in a Grand Fleet battleship; where he sums up the situation as a "period of intense boredom punctuated by moments of intense fear." Just over a year of this and he is transferred to a more active life in a small ship, H.M.S. "Forward," in the Mediterranean. In that ship he witnessed many events of the Gallipoli and Salonika campaign, including the burning of the latter city.

In the destroyer "Staunch" he spent much time in the Ægean Sea, taking part in the battle of Gaza, and he gives a vivid description of the torpedoing of his ship, of the attempts to save her, of the escape of the crew and of how she sank. Then we come back to the North Sea, in H.M.S. "Centaur" of the Harwich Force; here the author served during the last months of the war; he describes how the ship was mined and saved, and the surrender of the German submarines. This brings an adventurous four years of war service afloat to a close, and the story ends with descriptions of post war cruises in the Mediterranean and Atlantic.

The book gives a glimpse of naval life from a new and very human angle—that of the junior officer—therein lies the great part of its interest.

**A Stoker's Log.** By Henry Vincent. (Messrs. Jarrold). 5s. net.

This is a book about the Lower Deck of the Royal Navy, written by one who served throughout the war as one of its members. The author joined up as a stoker, 2nd class, early in 1915, and served as a stoker until the end of 1918, first in an old cruiser in the Cameroon campaign and on the West African Coast, and afterwards in a new Light Cruiser, the Flagship of the Harwich Force. He tells his story baldly and does not mince his language; in fact in places he uses pure "lowerdeckese," which is excusable because, without it, no true impression of the thoughts and feelings of the men, at that time, could be written. His first ship, which he calls the "Aspasia" was an old cruiser with an indifferent crew that grew gradually worse as succeeding drafts from England brought out a lot of "bad hats," whose doings are described without reserve. The author criticises severely the system of victualling which he found in this ship; to a landsman it must have seemed strange and conditions were admittedly bad, especially in some of the smaller ships on isolated tropical stations; happily these conditions have now been swept away. His second ship, the "Cordillera," gives an entirely different picture. Here the author served as writer in the Engineer's Office. He evidently kept his eyes open and frankly states his own impressions and those of

his shipmates in the closing months of the war. The book is illustrated with a series of clever silhouette sketches and is interesting as it gives an account of the naval stoker, who is so little known to the public.

**Thames Nautical Training College: "H.M.S. Worcester."** By Captain W. A. Morgan. (Charles Griffin & Co., Ltd.).

It is fitting that a history of the "Worcester" should be written by an old 'Worcester' boy, and Captain Morgan has produced a book that is not only a history but contains an account of life on board which will interest the ordinary reader as well as those connected with the ship. The log of the ship is given from the founding of the School in 1861 down to 1919. Succeeding chapters deal with the education, feeding, health, sports and social life of the ship; a chapter of personal notes makes amusing reading. The appendices, besides containing the war and other records of Old Boys, also give details of routine and diet and other matters which will be invaluable to parents who contemplate a career in the Merchant Navy for their sons; and the book will interest the boys themselves.

#### MILITARY

**The White Mutiny.** By Sir Alexander Cardew. (Constable & Co.). 12s. 6d.

In 1809 several hundred of the British officers of the East India Company's regiments in Madras, both European and Native, took action which amounted to mutiny. The Governor of Madras at the time was Sir George Barlow. After quoting the late Mr. H. Morse-Stephens, who wrote in the Dictionary of National Biography, that Sir George Barlow "failed utterly when placed in a government at a crisis," Sir Alexander Cardew states that he has made the attempt in "The White Mutiny" to ascertain how far this view is correct. He has come to the conclusion that Sir George Barlow does not deserve the obloquy which overwhelmed him and that, in fact, he saved the British Empire in India. Although the mutiny may be said correctly to be a forgotten episode, readers of Sir John Fortescue's "History of the British Army" will remember that he devotes a whole chapter to it in his VIIth volume. His opinion is that Sir George Barlow's name "should be remembered as that of the man who pushed to its logical extreme the principle that a British officer has no title to justice, and so brought about the illogical, but inevitable, result—a mutiny."

The interest of the book lies not so much in the clear description of the extraordinary state of society in Madras, both military and civil, and of the events which came to a climax in mutinous outbreaks, but rather in Sir Alexander Cardew's contention that the issue was a simple one, namely, whether the authority of civil government was to be supreme, or be overridden by a military *pronunciamento*.

Those who read—and it is to be hoped that the number will not be limited to military officers—may judge for themselves whether Sir Alexander Cardew is right, that Sir George Barlow saved India, or whether the view held by Mr. Morse Stephens and Sir John Fortescue is the more correct, namely that the mutiny would never have happened if Sir George Barlow had not mishandled the whole affair.

**The Defence of Bowler Bridge : A Study in Minor Tactics.** By H. E. Graham. (W. Clowes & Sons, London.) 3s. 6d.

This little book is modelled on its familiar predecessor, "The Defence of Duffer's Drift," but deals with the defence of a river crossing against a highly mobile and mechanized attack. The lessons to be derived from Lieutenant Smith's three dreams are to the point and clearly put, and should assist young officers in learning to think for themselves. But the wider utility of the book rests chiefly on the question as to how far readers will be able to apply the knowledge here imbibed towards dealing with other tactical situations, since this is but one possible problem among so many.

**Military Law.** By Lieut.-Colonel S. T. Banning, C.B.E. Seventeenth Edition. (Aldershot : Gale & Polden, Ltd.) 8s. 6d.

It is not often that one can praise so unreservedly a handbook solely designed for examination purposes. But "Military Law" stands in a category by itself; and one gladly welcomes the appearance of the 17th Edition of a valuable text book. It is based on the New Manual of Military Law; it has been meticulously revised, while the references and index have been improved.

**The Weary Road : Recollections of a Subaltern of Infantry.** By Charles Douie. Introduction by Major-General Sir Ernest Swinton, K.B.E. (John Murray, London). 6s.

This collection of ten sketches first appeared serially in the *Nineteenth Century and After*. They have now been reprinted in volume form. Deservedly so, for in delicacy of touch and fineness of feeling they must rank high in the literature of the Great War. There is a total absence of horrors and of vulgar realism in these pages that makes them delightful reading even by the fastidious.

#### REGIMENTAL HISTORIES

**The Worcestershire Regiment in the Great War.** By Captain H. Fitz M. Stacke, M.C., of the Regiment. With a Foreword by Field-Marshal Sir Claud Jacob, G.C.B., K.C.S.I., K.C.M.G., Colonel of the Regiment. (G. T. Cheshire & Sons, Ltd., Kidderminster).

This monumental work was compiled as part of the County War Memorial to all those officers and men of the Worcester Regiment who fell in the Great War. The amount of matter condensed into this one large volume of nearly 700 closely packed pages is remarkable. And it may well be so, for with twelve battalions at the Front this magnificent record of the Worcesters is virtually synonymous with a narrative of all the hardest fighting of the war, from the epic day at Gheluvelt, through the tragic story of Gallipoli, in Mesopotamia, in Italy, and so down to the last battles in France. The matter is good and well put together; the maps excellent; the photographs and appendices are on a lavish scale.

**The Essex Regiment : The Essex Militia.** By John Wm. Burrows, F.S.A. Published by arrangement with the Essex Territorial Army Association. (John H. Burrows & Sons, Southend-on-Sea). 5s.

This book is the fourth volume of the series, entitled "Essex Units in the War, 1914-1919." Just as the three preceding volumes dealt with the two regular

battalions and the Essex Yeomanry Regiment respectively, so this book constitutes a complete record of the Essex Militia. It begins with Saxon times and traces its activities throughout the whole of our military history down to the present day. The battalion did not proceed overseas during the Great War.

It is a work of patient research. The story is clearly told and well illustrated; there are appendices, notes on uniform and an index.

**Napier's Rifles : The History of the 5th Battalion, 6th Rajputana Rifles.**

By H. G. Rawlinson, Indian Educational Service. (Oxford University Press).

The 6th Rajputana Rifles consists of six linked battalions, and Napier's Rifles is the fifth of these. The present story of that battalion begins with its birth in 1817 during the last Maratha War. It then traces its work through the campaign in Sind, the Mutiny, in Abyssinia and Burma. The last sixty pages deal with the part taken by the battalion in the winter campaign in France, 1914-15, as well as its work in Mesopotamia and in Allenby's final campaign in Palestine. The story is well told and is supplemented with maps and portraits.

**The History of the Assam Rifles.** By Colonel L. W. Shakespear, C.B., C.I.E. (Macmillan & Co., London). £1 10s.

The five battalions of the Assam Rifles trace their descent back, through the old Military Police of Assam, to the two battalions of Assam Light Infantry of 1817, as well as to the "Cuchar Levy" of 1835. Since that date they have been entirely engaged in military police duties in the little known regions adjacent to Assam. The record of these operations is full of unusual incident. During the Great War the Assam Rifles supplied drafts to various Goorkha regiments serving in France, Egypt, Gallipoli and Mesopotamia. This most interesting volume is profusely illustrated; there is a map and an index.

## ADDITIONS TO THE LIBRARY

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- SPANISH DOCUMENTS CONCERNING ENGLISH VOYAGES TO THE CARIBBEAN, 1527-1568. Hakluyt Society, Series II, Vol. LXII.
- VOYAGES TO THE EAST INDIES. Christopher Fryke and Christopher Schweitzer. Edited by C. E. Fayle. 10s. 6d. 8vo. (Cassell & Co., London).
- FRANCE AND THE FRENCH. By Sisley Huddleston. 3s. 6d. 8vo. (Jonathan Cape, London).
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- BRITISH HISTORY. By Ramsay Muir. 7s. 6d. 8vo. (G. Philip & Son, London).
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- LETTERS AND FRIENDSHIPS OF SIR CECIL SPRING-RICE. 2 Vols. Edited by Stephen Gwynn. 42s. 8vo. (Constable & Co., London).
- FOCH. By J. R. Frs. 6. 8vo. (Payot, Paris). 1921. Presented by Captain A. C. Whitehouse.
- GREAT BRITAIN AND THE SLAVE TRADE, 1839-1865. By W. L. Mathieson. 12s. 6d. 8vo. (Longmans, Green & Co., London).
- THE GREAT EARL OF PETERBOROUGH. By Brigadier-General C. Ballard, C.B., C.M.G. 21s. 8vo. (Skeffington & Son, Ltd., London). Presented by the Publishers.

## NAVAL

- THE THAMES NAUTICAL TRAINING COLLEGE, H.M.S. "WORCESTER," 1862-1919. By Captain W. A. Morgan. 8vo. (Charles Griffin & Co., London). Presented by the Author.
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## MILITARY

- A SUBALTERN'S WAR. (SOMME, 1916—YPRES, 1917). By C. Edwards. 7s. 6d. 8vo. (P. Davies, London).
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This Diagram should have accompanied the article on  
"The Self-Defence of an Infantry Battalion against Armoured  
Fighting Vehicles," by Captain H. W. Mirehouse, M.B.E.,  
*p.s.c.*, which appeared in the August JOURNAL.

It was inadvertently omitted when binding.



THEORETICAL COVERING OF A BATTALION AREA  
BY FOUR ANTI-TANK GUNS

Diagram A

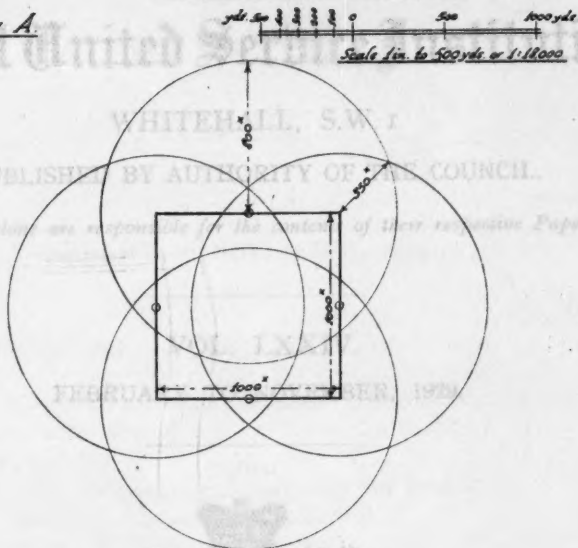
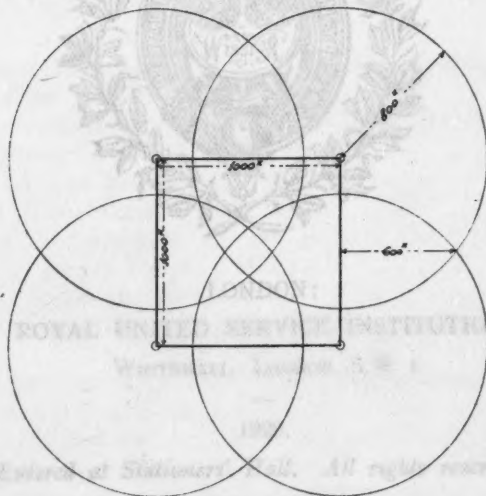


Diagram A<sup>I</sup>

Above Scale



THEORETICAL CONSIDERATIONS

IN THE THEORY OF

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THEORY OF

101



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